QUESTIONS PRESENTED

The Petitioner has raised the following two questions in his Petition for Writ of Certiorari before this Court:

1. Whether an action brought by a death-sentenced prisoner pursuant to 42 U.S.C. § 1983, which does not attack a conviction or sentence, is – simply because the person is under a sentence of death – to be treated as a habeas corpus case subject to the restriction on successive petitions which categorically precludes review of *any* constitutional violation not related to innocence (as the Fourth, Fifth and Eleventh Circuits hold), or can be maintained as § 1983 action (as the Sixth, Eighth and Ninth Circuits and several lower courts hold)?

2. Whether a cut-down procedure, which involves pain and mutilation, conducted prior to an execution by lethal injection, violates the Eighth Amendment to the United States Constitution?

STATEMENT OF INTEREST OF AMICI CURIAE

Each amicus curiae is a practicing physician in the State of Alabama[1]. The amici curiae have been informed of the medical procedures the Respondents have proposed using to gain venous access to the Petitioner to execute him by lethal injection.

The proposed medical procedures concern us as physicians for a number of reasons. First, obtaining central venous access is a complex medical procedure that involves serious risks and should only be performed by properly trained personnel. In this situation the Respondents will not disclose the credentials of the people who will be performing the procedure, including whether or not the physician is actually licensed to practice medicine in the State of Alabama or any other state. We are also concerned because it is apparent to us that the Respondents hope to implement a plan that was not designed by competent, credentialed physicians, and thereby are placing the Petitioner at high risk of enduring severe and needless pain and suffering.

1 Pursuant to Rule 37.6, Rules of the Supreme Court of the United States, counsel for neither party has authored this brief in whole or in part.

SUMMARY OF ARGUMENT

The Respondents must gain venous access to the Petitioner in order to execute him by lethal injection. Venous access may be obtained in most people by placing a very thin catheter under the skin in the hand or arm. Gaining venous access in this manner is referred to as peripheral venous access and is a relatively simple procedure.

Gaining peripheral venous access may be difficult or essentially impossible in some patients. When dealing with these people, central venous access must be obtained, which involves obtaining access to a central vein such as those in the chest and abdomen. Central venous access can only be achieved via a relatively complicated medical procedure.

The Respondents have essentially conceded that they will not be able to gain peripheral venous access to the Petitioner in order to execute him by lethal injection. As such, they will have to perform an invasive medical procedure to gain central venous access to the Petitioner prior to his execution.

There are two predominant methods for obtaining central venous access - - the percutaneous technique and the cut down

technique. In the overwhelming majority of situations where central venous access is required, the percutaneous technique is heavily favored over the cut down technique. This is because the percutaneous technique is less invasive, less painful, safer, faster, easier to learn, easier to teach, and easier to perform.

Attempts to gain central venous access should only be made by skilled, experienced physicians who have been specially trained to perform the requisite medical procedures. It cannot be emphasized enough that merely being a physician in no way qualifies a person to perform medical procedures to gain central venous access.

Many serious and painful complications may arise while a central venous catheter is being placed. These complications include severe pain, hemorrhage (severe bleeding), serious cardiac arrhythmias (abnormal beating of the heart causing shock), and pneumothorax (lung collapse due to collection of air between the lung and chest wall). Additionally, the amount of pain caused by the procedure is related to the experience of the medical practitioner performing the procedure.

For some unknown reason, the Respondents intend to use the cut down procedure instead of the percutaneous procedure. The Respondents also refuse to disclose the credentials and experience of the medical personnel who will be in charge of performing the cut down procedure.

Based on the scant information that the Respondents have disclosed, it appears that people with sufficient medical knowledge have not designed the medical procedure being prepared by the Respondents. Furthermore, there are no assurances that a competent, qualified, licensed physician will be performing the medical procedures proposed by the Respondents.

Of no small concern is the fact that the proposed medical procedures described by the Respondents include references to anatomy not present in human beings. In addition, the Respondents use the terms "percutaneous technique" and "cut down technique" interchangeably when the techniques are completely distinct.

Based upon the foregoing, the amici curiae have grave concerns about the medical procedures proposed by the Respondents. The amici curiae strongly recommend that the Petitioner's execution

be postponed until the Respondents disclose a medically sound, detailed description of the procedure that will be undertaken as well as a description of the experience and credentials of the medical personnel who will be performing the procedure.

ARGUMENT

I. INTRODUCTION

The Respondents have encountered a unique problem in the Petitioner's case involving the need for medical procedures to be performed on the Petitioner in order for the Respondents to gain intravenous access to the Petitioner for the purpose of executing him by lethal injection. It the intent of the amici curiae to outline some of the considerations surrounding intravenous access and also to explain the bases for our concerns about the medical procedures for gaining intravenous access to the Petitioner which are being contemplated by the Respondents.

II. BASIC CONSIDERATIONS REGARDING INTRAVENOUS ACCESS

Obtaining intravenous access is a common and essential procedure in the contemporary practice of medicine, because many drugs are only effective if delivered directly into the venous system.

In the vast majority of situations, intravenous access can be easily obtained by placing a very thin catheter (the same diameter or smaller than the wire of a coat hanger) into a vein located just under the skin in the hand or arm. This is called "peripheral access", as contrasted with "central access" which makes use of a "central vein" such as those in the chest and abdomen. Peripheral access is usually a minor procedure that causes a small amount of pain or discomfort, comparable to that caused by a vaccination.

Unfortunately, in some patients peripheral access cannot easily be obtained, or is essentially impossible to obtain. One circumstance where this problem is commonly encountered is in patients who have received chemotherapy, which causes injury and scarring of peripheral subcutaneous veins. As their veins deteriorate, a point is reached where the search for peripheral access becomes arduous and agonizing, and the patient and physician reach a joint decision to place a central intravenous catheter. This decision is not reached lightly, as placement of a chronic indwelling central catheter is a non-trivial surgical procedure that involves pain and risk. Often the patient is referred to a physician with expertise in obtaining vascular access; as

many physicians do not themselves have the experience and credentials to place a central catheter or to treat the complications that are associated with the procedure. Other clinical situations that involve difficult intravenous access include obese patients (in whom the subcutaneous veins are obscured by adipose tissue), patients who have taken corticosteroids for diseases such as arthritis and lupus, patients who suffer from diabetes and regularly inject insulin, and patients with a history of intravenous drug abuse. Additionally, some patients without any apparent reason just have no readily accessible peripheral veins.

Central venous access is indicated in several other clinical situations. As an example, patients undergoing major surgery often undergo central line placement (usually after general anesthesia has been induced) for the purposes of delivering large volumes of blood and fluids to treat anticipated intraoperative bleeding. Patients undergoing cardiac catheterization for diagnostic purposes may also require the placement of central venous catheters. Central access is also required for the placement of implanted cardiac pacemakers. The above list is not intended to be comprehensive, but rather is presented

for the purpose of conveying the scope of settings in which central intravenous access may be required.

It should be noted that in the great majority of the above-referenced therapeutic situations, peripheral intravenous access is obtained prior to embarking on the central venous access procedure. This allows the practitioner to administer painkillers and sedatives which render the central venous access procedure virtually innocuous. In the rare and unfortunate situation where peripheral intravenous access cannot be established before placing the central line, the experience is physically grueling, painful, and arduous for the person undergoing the procedure.

III. TECHNIQUES FOR OBTAINING CENTRAL VENOUS ACCESS

Putting aside rarely used methods, it is fair to say that two main techniques are used for obtaining central venous access. One technique, which is the most commonly used today, is called the "percutaneous technique". This involves inserting a needle through the skin and into the vein, then passing a thin wire through the lumen of the needle, then removing the needle over the wire to leave the wire placed in the vein, and then finally advancing a thin flexible catheter

over the wire into the vein. The wire can then be removed, leaving the catheter in the vein. Usually this procedure is performed in the groin (femoral vein), the neck (internal or external jugular vein), or under the collar bone (subclavian vein).

The second technique for obtaining central intravenous access is called the cut down technique. This involves the use of a scalpel to make a series of incisions through the skin, the subcutaneous fat, and the underlying muscle, to reach the relatively deeply located central vein. The length of these incisions is in the range of two inches and depends upon a variety of factors including location of the incision, degree of scarring, depth of the vessel, and the skill of the surgeon. As with the percutaneous technique, this procedure is usually performed in the groin (femoral vein), the neck (internal or external jugular vein), or under the collar bone (subclavian vein). The cut down technique is also used to obtain access to veins in the arm and leg, particularly in the setting of shock from trauma, where bleeding has emptied the vascular system and percutaneous access is thereby made difficult. Unlike the percutaneous technique, the cut down technique requires an array of surgical tools including hemostats, retractors, scissors, and

scalpels. The procedure typically requires the use of electrocautery, which is used to stop bleeding by burning the open ends of blood vessels.

The selection between these techniques is a therapeutic decision that is made by the practitioner based on the considerations of the individual situation. Nevertheless, we state with confidence that in the overwhelming majority of situations where central access is required, the percutaneous technique is heavily favored over the cut down procedure. The reasons for this are simple: compared with the cut down technique, the percutaneous technique is less invasive, less painful, less expensive, safer, faster, easier to learn, easier to teach, and easier to perform.

IV. QUALIFICATIONS FOR OBTAINING CENTRAL ACCESS

Obtaining central venous access, whether by the percutaneous technique or the cut down technique, is a significant medical procedure that requires skill, judgment, and experience. These procedures are typically taught during post-graduate medical residency training, and involve "elbow to elbow" supervision by an experienced practitioner. Some medical specialties (including surgery,

anesthesiology, cardiology, intensive care, and interventional radiology) frequently involve placement of central venous catheters. In other medical specialties, it is frequently the case that a patient requiring central venous access will be referred to a physician with expertise and proficiency in performing the procedure.

For physicians to be permitted to practice in a given hospital, they must apply for and receive admitting privileges. As part of this process, a physician will apply for permission to perform various procedures, and hospitals have in place systems for ascertaining whether such procedure privileges should be granted. Obtaining central venous access, whether by the percutaneous technique or the cut down technique, is a procedure that is specifically privileged by hospitals. This system is followed throughout the country as a means of ensuring that personnel possessing adequate training and experience care for patients. In particular, in granting privileges for performing central venous access a hospital board would need evidence that a physician performs the procedure with significant frequency and has appropriate credentials. Among the required credentials would be evidence of active state licensure. A hospital would also need to

review a physician's career record to ensure that there was no history of licensure revocation for misconduct or incompetence. It is very important to understand that merely being a physician in no way provides an assurance that proficiency or even familiarity with intravenous access exists.

V. COMPLICATIONS OF PLACING CENTRAL VENOUS CATHETERS

One of the reasons for requiring credentialing for obtaining central venous access is that the procedures are associated with significant complications. These complications include pain, hemorrhage (severe bleeding), cardiac arrhythmias, and pneumothorax (accumulation of air in the space between the lung and inner chest wall, causing lung collapse and suffocation). The amount of pain caused by the procedure is related to the experience of the practitioner. A skilled practitioner will spend less time "fishing around" to find the location of the vein and will be more adept at effectively infiltrating local anesthesia to make the procedure more comfortable.

Hemorrhage can occur because of lacerating or rupturing the large blood vessels that are the targets of the procedure. Hemorrhage can be external or internal. If it is external, one result can be

widespread distribution of blood throughout the operative field, including the drapes covering the patient's face, the floor, the medical personnel, and the operating table. If the hemorrhage is internal, expertise and experience is often required to recognize the problem and provide appropriate treatment. Hemorrhage, while not painful per se, is extraordinarily distressing and is associated with nausea, shortness of breath, a sense of suffocation, and terror.

Cardiac arrhythmias (abnormal beating of the heart) can be triggered by inadvertent stimulation of the heart muscle by the catheter or wire. These arrhythmias can cause a profound lowering of blood pressure, which like hemorrhage is extremely distressing. If that were to occur, the patient would likely require electrical defibrillation or electrical cardioversion, both of which would burn the skin and produce an extraordinarily agonizing experience for a conscious patient.

Finally, the complication of pneumothorax can be caused by inadvertently puncturing the thin sac that separates the lungs from the inner side of the chest wall. The resulting lung collapse is painful and extremely distressing, causing suffocation and sometimes death. The

treatment of pneumothorax involves the insertion of one or more large diameter tubes (approximately one-half inch in diameter) between the ribs and deep into the chest to evacuate the air. This procedure is painful, should only be performed by experienced practitioners, and is accompanied by its own set of catastrophic complications.

It should be noted that in most clinical situations in which central venous access is being obtained, peripheral intravenous access has already been established. Peripheral lines play a critical role in the treatment of the above-described complications because they permit the administration of painkillers and sedatives, drugs for treating arrhythmias, and allow for the infusion of blood and other fluids to treat hemorrhage. Logically, in a setting where central access is required because peripheral access could not be achieved, these complications are much more fearsome and difficult to manage.

VI. CONCERNS OF AMICI CURIAE REGARDING THE STATE OF ALABAMA'S PROPOSED PROCEDURES TO OBTAIN CENTRAL VENOUS ACCESS IN THE PETITIONER

It is our understanding that the Petitioner has a history of difficult intravenous access. The affidavit of Warden Grantt Culliver states that difficulty is anticipated in obtaining intravenous access and

that a plan has been formulated to obtain central venous access. It is our further understanding that this plan involves attempting catheter placement in the groin, the neck, or the arm.

It is our understanding that the Respondents have refused to disclose the State of Alabama's protocol for lethal injection and have disclosed very little information about the methods that will be employed in attempts to gain venous access in the Petitioner. It is our further understanding that the Respondents have not disclosed any information about the personnel who will be placing the central catheter in the Petitioner, including information about the personnel's credentials and experience. Indeed, it is not even known whether the individual who will be performing the medical procedure holds a current license to practice medicine in the State of Alabama or any other state. Thus, there is no assurance or basis for confidence that a suitably proficient practitioner will perform the medical procedure.

The failure on the part of the Respondents to provide this information makes it impossible to rationally ascertain whether or not reasonable steps have been taken to ensure that the procedure will not be bungled and cause extreme suffering and distress to the Petitioner.

Warden Culliver in his affidavit states that if the central intravenous access is obtained via the neck, the "external carotid vein" will be used. There is no such structure in human beings, and it is not credible to the amici curiae that a trained physician or practitioner would even mistakenly use this term. Oddly, an affidavit by Dr. Marc Sonnier also uses the term "external carotid vein". The use of this term bespeaks the presence of less than a glimmer of familiarity with the procedure and buttresses our concern that the personnel recruited by the Respondents for this procedure will not possess the requisite proficiency and expertise. It is difficult to believe that any personnel currently employed by the Respondents possess the requisite expertise to perform, review, or "sign off" on the procedures proposed by the Respondents.

It is our understanding that Warden Culliver's initial plan was to place the central line twenty-four hours in advance of the execution. This plan reflects a troubling lack of judgment. The fact that Warden Culliver retracted this ill-advised plan, eventually asserting that the procedure would be performed one or two hours prior to the execution, does nothing to mitigate the fact that he made the proposal and, for a

period of time, defended it. Also, it is our understanding that Warden Culliver initially informed the Petitioner that the procedure would involve an incision a quarter of an inch in length but later informed the Petitioner, as is reflected in his affidavit, that the incision would be approximately two inches in length. Warden Culliver clearly lacks the experience and expertise to make decisions about the medical features of the procedure.

It is also our understanding that during early discussions about plans to obtain intravenous access in the Petitioner, Warden Culliver used the term "cut-down" to refer to the percutaneous procedure. As described above, the two procedures are very different, and in virtually all cases it is preferable to use the percutaneous technique. Warden Culliver's failure to discern the distinctions between these procedures, in conjunction with his apparent prominent role in designing the procedure, strongly suggests that the Petitioner is at risk for being subjected to a poorly designed procedure.

In summary, the procedures for obtaining central venous access are complex medical procedures that require training and skill and should only be performed by experienced and credentialed personnel.

Warden Culliver's approach thus far has been to conceal from the Petitioner the nature of the procedure to be performed and the qualifications of the personnel who will be performing it. Based upon the scant information that has been provided by the Respondents, the amici curiae are concerned that the Petitioner is at great risk of experiencing unnecessary suffering and pain.

VII. CONCLUSION

In view of the above-described problems, each amicus curiae cannot escape the unfortunate conclusion that the Respondents have taken a haphazard and disarrayed approach to designing the procedure for obtaining intravenous access in the Petitioner's case. This situation brings to mind an adage of medical training, "failing to plan is planning to fail". We do not understand why it would not be in the best interest of the Respondents to contract with a demonstrably experienced physician to perform the procedure of obtaining central intravenous access on the Petitioner. We also do not understand why it would not be in the best interest of the Respondents to provide information about the physician's credentials so that it could be reasonably determined that central intravenous access would be

obtained in a fashion that would minimize the risk of needless cruelty, pain, and suffering.

It is our understanding the need to obtain central venous access in the Petitioner is not emergent. The readily apparent lack of a coherent program for designing and carrying out this procedure on the Petitioner leads us to recommend in the strongest possible terms that the procedure be postponed until the elements set forth above are brought into place. Specifically, we recommend that the Respondents be required to disclose a reasonably detailed and medically sound description of the procedure to be undertaken and a detailed description of the personnel who will be performing the procedure, including the credentials of the medical personnel. We, of course, recognize the medical personnel's desire for anonymity in the context of performing medical procedures related to an execution. However, it is not difficult to envision a solution that allows for a review of this information without revealing the identity of the specific personnel. For example, a mutually agreed upon independent party could review the professional credentials and licensure of the medical personnel and provide an assurance to interested parties that appropriately

credentialed personnel would be involved.

The amici curiae respectfully request that this Court grant the Petitioner's Petition for Writ of Certiorari.

Respectfully submitted,

KATHRYN LOUISE LIPPERT
Alabama Bar No. ASB-8428-I64K
Counsel for Amici Curiae

Post Office Box 661111
Birmingham, Alabama 35266
Telephone (205) 426-3705
Fax Number (205) 426-3750

CERTIFICATE OF SERVICE

I hereby certify that I have this date served a true and correct copy of this Brief of Amici Curiae in Support of Petitioner by United States Mail with proper postage affixed thereto upon the following:

Mr. Michael Billingsley
Deputy Attorney General
Alabama State House
11 South Union Street
Montgomery, Alabama 36130

Michael Kennedy McIntyre
507 The Grant Building
44 Broad Street, N.W.
Atlanta, GA 30303

H. Victoria Smith
507 The Grant Building
44 Broad Street, N.W.
Atlanta, GA 30303

Dated: This 10th day of November, 2003.

Kathryn L. Lippert
KATHRYN LOUISE LIPPERT

EXHIBIT 144

EXHIBIT 144

LAS VEGAS SUN

LAS VEGAS SUN

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March 18, 2004

Killer makes final requests

Victim's family members plan to attend execution

By Cy Ryan <cy@lasvegassun.com>
SUN CAPITAL BUREAU

CARSON CITY – Las Vegas killer Lawrence Colwell wants to be well-groomed when he goes to his execution March 26 at the Nevada State Prison.

Colwell has asked to receive a haircut and to have his teeth cleaned before he is put to death by lethal injection, prison spokesman Fritz Schlottman said.

The inmate has been placed in protective custody in a single-bed cell. The section he is in has its own exercise yard.

Schlottman described Colwell's demeanor as "matter-of-fact." Colwell has declined further court appeals and said he wants to be executed. But he has left the door open to renew his appeal and get a stay of execution from the federal court.

He has said he will decide that issue by Wednesday.

Colwell has declined to be interviewed by the press.

Terry Rosenstock, the son of the victim, and Mindy Dinburg, the daughter, plan to attend the execution. Rosenstock said, "We have to," he said, "for closure."

Rosenstock, of New York, said Colwell "did wrong by my father," and the killing "leaves a permanent mark on my life."

Rosenstock said he and Dinburg, who lives in New Jersey, plan to arrive the night before the execution.

Colwell has asked that his television, which was in storage, be returned to him.

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Schlottman said. Colwell has also asked for ice in his soft drinks. The prison does not have an ice-making machine, Schlottman said.

Colwell, who turned 36 on March 1, would be the 10th person executed since Nevada re-established the death penalty in 1977. The last execution was of Sebastian Bridges on April 21, 2001.

In 1901 the Legislature ordered all executions to be carried out at the state prison in Carson City, according to state archivist Guy Rocha. Since then 51 men have been executed: 32 in the gas chamber; 10 by hanging; eight by lethal injection; and one shot.

The only woman ever executed, Elizabeth Potts, was hanged with her husband Josiah Potts in Elko using double gallows on June 20, 1890, for the shooting murder and mutilation of Miles Faucett in Carlin.

The oldest man executed at the state prison was John Kramer, 61, who was put to death in August 1942. The youngest was Floyd Lovelace, 17, who was put to death in September 1944 for the murder of a constable near Carlin when Lovelace was 15.

The March 25 execution is expected to have an estimated 20 witnesses, including the family members and 10 members of the media, Schlottman said.

On March 10, 1994, Colwell and his girlfriend Merilee Paul robbed and murdered 76-year-old Frank Rosenstock at the Tropicana. Rosenstock, of Florida, was handcuffed and strangled with a belt.

Colwell and Paul fled to Oregon, where she turned herself in to authorities. She pleaded guilty to first-degree murder and testified against Colwell. She is serving a life term with the possibility of parole.

The state initially did not seek the death penalty in the case, but Colwell offered to plead guilty to all charges if the state changed its position. At the penalty hearing before three judges, Colwell asked to be put to death.

Before the execution, Colwell, whose alias is Charles Durant, will be transferred to one of two "last-night cells," where three to four officers will be assigned. Prison rules say one guard must always have the condemned man in sight so he does not try to commit suicide.

Radio and television sets are placed outside the cell, so there are no cords in the cell. The condemned man is strip-searched before he enters the cell. He is allowed to order his last meal.

There is a telephone outside the cell so the inmate can make his final calls, or seek a stay of execution.

Clergy members are available, and several hours before the execution the inmate can request a sedative.

At the appointed time the inmate is led by guards to the death room, where he is placed on a gurney and secured by straps on his wrists, biceps, chest, stomach and legs. He is not masked or hooded and he can move his head to

face the witnesses if he wishes.

Through three windows, witnesses can view the inmate being strapped down. The shades are drawn when an intravenous tube is placed in each arm. The shades are then lifted again, with the condemned man lying on the gurney.

Some of the condemned men have mouthed words to the witnesses, either asking for forgiveness or claiming their innocence. Others kept their eyes toward the ceiling. The inmate is asked by Corrections Director Jackie Crawford whether he has any last words.

The lethal drugs are then administered. An unidentified person, hidden from view in an adjoining room, pushes the syringe.

Prison physician Dr. Ted D'Amico said sodium thiopental is administered first to put the man to sleep; then 20 milligrams of Pavulon goes into the veins to stop the lungs; and finally, potassium chloride, which stops the heart.

The process takes several minutes. The blinds are then drawn and D'Amico enters the room to pronounce death.

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EXHIBIT 145

EXHIBIT 145

Inadequate anaesthesia in lethal injection for execution

Leonidas G Koniaris, Teresa A Zimmers, David A Lubarsky, Jonathan P Sheldon

Lancet 2005; 365: 1412–14

Dewitt Daughtry Family Department of Surgery (L G Koniaris MD, T A Zimmers PhD), and Department of Anesthesiology, Perioperative Medicine, and Pain Management (D A Lubarsky MD), Miller School of Medicine, and Department of Management, School of Business (D A Lubarsky MD), University of Miami, Miami, FL, USA; and Law Office of Jonathan P Sheldon, Arlington, VA, USA (J P Sheldon JD)

Correspondence to: Dr Leonidas G Koniaris, Alan Livingstone Chair in Surgical Oncology, 3550 Sylvester Comprehensive Cancer Center (310T), 1475 NW 12th Avenue, Miami, FL 33136, USA
lkoniaris@med.miami.edu

Anaesthesia during lethal injection is essential to minimise suffering and to maintain public acceptance of the practice. Lethal injection is usually done by sequential administration of thiopental, pancuronium, and potassium chloride. Protocol information from Texas and Virginia showed that executioners had no anaesthesia training, drugs were administered remotely with no monitoring for anaesthesia, data were not recorded and no peer-review was done. Toxicology reports from Arizona, Georgia, North Carolina, and South Carolina showed that post-mortem concentrations of thiopental in the blood were lower than that required for surgery in 43 of 49 executed inmates (88%); 21 (43%) inmates had concentrations consistent with awareness. Methods of lethal injection anaesthesia are flawed and some inmates might experience awareness and suffering during execution.

Since 1976, when the death penalty was reinstated, 959 people have been executed in the USA.[1] Lethal injection has eclipsed all other methods of execution because of public perception that the process is relatively humane and does not violate the Eighth Amendment prohibition against cruel and unusual punishment. US courts recognise "evolving standards of decency that mark the progress of a maturing society", and prohibit punishments that "involve the unnecessary and wanton infliction of pain", "involve torture or a lingering death", or do not accord with "the dignity of man".[2]

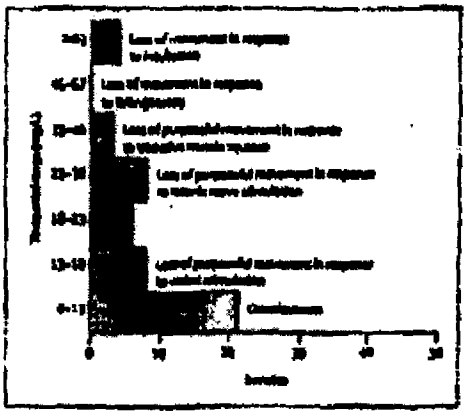
Lethal injection usually consists of sequential administration of sodium thiopental for anaesthesia, pancuronium bromide to induce paralysis, and finally potassium chloride to cause death.[3] Without anaesthesia, the condemned person would experience asphyxiation, a severe burning sensation, massive muscle cramping, and finally cardiac arrest. Thus, adequate anaesthesia is necessary both to mitigate the suffering of the condemned and to preserve public opinion that lethal injection is a near-painless death. By contrast with its medical applications, however, anaesthesia in execution has not been subjected to clinical trials, governmental regulation, extensive training of practitioners, standardisation, or the supervision of peer-review and medicolegal liability. Furthermore, the American Medical Association and American Nurses Association strictly oppose participation of their members in executions. We postulated that anaesthesia methods in lethal injection might be inadequate.

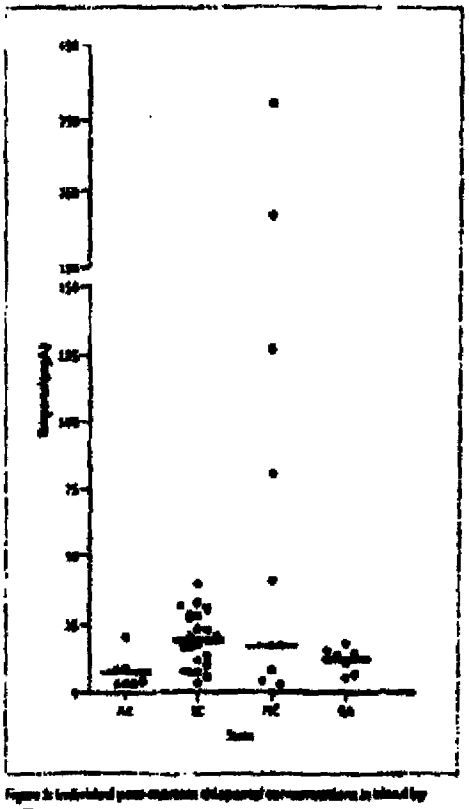
To assess anaesthesia methods, we sought protocol information from the states of Texas and Virginia, where 45·4% of executions are done, by a combination of statutory records requests to the Texas Department of Criminal Justice and the Virginia Department of Corrections, along with personal interviews and sworn testimony of corrections officials involved in executions. We noted that: neither state had a record of the creation of its protocol (Texas Department of Criminal Justice Assistant General Counsel, January and February, 2004; and Virginia Department of Corrections Director of Communications, December, 2003; written communication); executioners—typically one to three emergency medical technicians or medical corpsmen—had no training in anaesthesia (Virginia Department of Corrections Director of Communications, written communication; and personal interview of a former senior Texas corrections official who witnessed 119 Texas executions hereafter "personal interview");[4] after placement of one or two intravenous lines, executioners stepped behind a wall or curtain and remotely administered drugs to the conscious inmate (personal interview);[4] no direct observation, physical examination, or electronic monitoring took place for anaesthesia (personal interview);[4] and there was no data collection, documentation of anaesthesia, or post-procedure peer review (Virginia Department of Corrections Director of Communications, written communication; and personal interview). No assessment of depth of anaesthesia or loss of consciousness was done; apparently anaesthesia is assumed because a relatively large quantity of thiopental is specified (usually 2 g) compared with the typical clinical induction dose of 3–5 mg/kg, immediately followed by 1–1·5 mg/kg per min for maintenance; this dose equates to 270–450 mg for induction and 90–135 mg/min maintenance for a 200 lb man.

The assumption that 2 g thiopental ensures anaesthesia is overly simplistic, however. First, technical difficulties or procedural errors by poorly trained executioners might hinder administration of the total dose. Second, if thiopental anaesthesia were maintained at standard infusion rates, the total dose for a 10-min procedure in a 100 kg man would be 1·3–2·0 g. Thus the dose used is not excessive for the average time from injection to death (8·4 min, SD 4·7) and might be inadequate if the process took longer.[5] Third, a person anticipating execution would be fearful, anxious, and hyperadrenergic, and would need a higher dose of thiopental than would a premedicated surgical patient. Fourth, inmates with histories of chronic substance misuse problems might have high tolerance to sedative hypnotics and would need increased doses of anaesthetic.

Because no documentation of anaesthesia in the execution chamber existed, the only available objective data were postmortem concentrations of thiopental. Texas and Virginia refused to provide such data, but we obtained autopsy toxicology results from 49 executions in

Arizona, Georgia, North Carolina, and South Carolina. Toxicology reports were generated by MedTox Laboratories (St Paul, MN) for Arizona and are available in Beardslee versus Woodford, No C-04-5101 (Northern District of California, 2004). Data from the Division of Forensic Sciences Georgia Bureau of Investigation are available in State versus Nance, Superior Court Indictment No 95-R-2461-4. North Carolina reports were obtained directly from the Office of the Chief Medical Examiner, South Carolina Law Enforcement Division Toxicology Department reports were obtained by attorney David Barron, Kentucky Department of Public Advocacy Capital Post-Conviction Unit (personal communication) and are available in Hill versus Ozmint, No 2:04-0409-18AJ (District of South Carolina, 2004). Although the protocols of all four states are similar to those of Texas and Virginia, and specify that 2 g





thiopental is used, concentrations of the drug in the blood ranged from only trace amounts to 370 mg/L (median 13·5 mg/L; figure 1). Thiopental concentrations did not fall with increased time between execution and blood sample collection (data not shown), consistent with data showing that thiopental is quite stable in stored human plasma.[3]

Extrapolation of intraosseous depth of anesthesia from post-mortem blood thiopental concentrations is admittedly problematic. To estimate concentrations of thiopental in the brain from concentrations in the blood in life, details of the rate and duration of drug administration are needed. Unfortunately, such details are usually not specified in lethal injection protocols. Furthermore, no data about post-mortem distribution of thiopental are available. However, a large range of blood concentrations resulted from nearly identical protocols across and within individual states—from 0·2 mg/L to 370 mg/L in North Carolina for the same sampling site (intravenous access) and similar collection times (same day or next day, respectively). This finding suggests substantial variations in either the autopsy or anesthesia methods. Contrasting the expertise of state medical examiners with the relatively unskilled executioners, however, would strongly suggest that the variation is probably due to differences in drug administration in individual executions.

If post-mortem thiopental concentrations are taken as a surrogate marker of concentrations in the blood during life, most of the executed inmates had concentrations that would not be expected to produce a surgical plane of anaesthesia, and 21 (43%) had concentrations consistent with consciousness (figure 2). In a careful study in which actual serum thiopental concentrations were measured against clinical endpoints, the study team serum concentrations needed to produce a 50% probability of no

muscle response (Cp50) after intubation was defined as 78·8 mg/L (SD 2·9).[7] The Cp50 for movement after trapezius muscle squeeze, a stimulus equivalent to skin incision, was 38·9 mg/L (3·3). Remarkably, 43 of the 49 inmates had blood thiopental concentrations below this level. Most worryingly, 21 inmates had concentrations less than the Cp50 for suppression of movement in response to a vocal command. In view of these data, we suggest that it is possible that some of these inmates were fully aware during their executions. We certainly cannot conclude that these inmates were unconscious and insensate. However, with no monitoring and with use of the paralytic agent, any suffering of the inmate would be undetectable.

With little public dialogue about protocols for killing human beings, it is pertinent to consider recommendations from animal euthanasia protocols. The American Veterinary Medical Association (AVMA) panel on euthanasia specifically prohibits the use of pentobarbital with a neuromuscular blocking agent to kill animals,[8] and 19 states, including Texas, have expressly or implicitly prohibited the use of neuromuscular blocking agents in animal euthanasia because of the risk of unrecognised consciousness.[4] Furthermore, AVMA specifies that "it is of utmost importance that personnel performing this technique are trained and knowledgeable in anesthetic techniques, and are competent in assessing anesthetic depth appropriate for administration of potassium chloride intravenously. Administration of potassium chloride intravenously requires animals to be in a surgical plane of anesthesia characterized by loss of consciousness, loss of reflex muscle response, and loss of response to noxious stimuli".[8] The absence of training and monitoring, and the remote administration of drugs, coupled with eyewitness reports of muscle responses during execution, suggest that the current practice of lethal injection for execution fails to meet veterinary standards.[8]

Our data suggest that anaesthesia methods in lethal injection in the USA are flawed. Failures in protocol design, implementation, monitoring and review might have led to the unnecessary suffering of at least some of those executed. Because participation of doctors in protocol design or execution is ethically prohibited, adequate anaesthesia cannot be certain. Therefore, to prevent unnecessary cruelty and suffering, cessation and public review of lethal injections is warranted.

Contributors
L G Koniaris and J P Sheldon conceived the study. J P Sheldon collected the protocol information. J P Sheldon and T A Zimmers collected the toxicology data. D A Lubarsky, L G Koniaris, and T A Zimmers analysed the protocol information and toxicology data. All authors participated in the writing and editing of the manuscript. L G Koniaris and T A Zimmers contributed equally to this work.

Conflict of interest statement
JS is an attorney who represents inmates sentenced to death. None of the other authors has a conflict of interest.

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EXHIBIT 146

EXHIBIT 146

Declaration of Mark J. S. Heath, M.D.

I, Mark J.S. Heath, M.D., hereby declare as follows:

1. I am an Assistant Professor of Clinical Anesthesiology at Columbia University in New York City. I received my Medical Doctorate degree from the University of North Carolina at Chapel Hill in 1986 and completed residency and fellowship training in Anesthesiology in 1992 at Columbia University Medical Center. I am Board Certified in Anesthesiology, and am licensed to practice Medicine in New York State. My work consists of approximately equal parts of performing clinical anesthesiology, teaching residents, fellows, and medical students, and managing a neuroscience laboratory. As a result of my training and research I am familiar and proficient with the use and pharmacology of the chemicals used to perform lethal injection. I am qualified to do animal research at Columbia University and am familiar with the American Veterinary Medical Association's guidelines.

2. Over the past several years, as a result of concerns about the mechanics of lethal injection as practiced in the United States, I have performed many hundreds of hours of research into the techniques that are used during this procedure. I have testified as an expert medical witness in courts in Maryland, Georgia, Tennessee, Kentucky, Virginia, and Louisiana in the following actions: *Baker v. Saar*, No. WDQ-05-3207 (D. Md.); *Evans v. Saar*, No. 1:06-CV-00149-BEL, (D. Md.);
Reid v. Johnson, No. 3:03cv1039 (E.D. Va.); *Abdur'Rahman v. Bredesen*, No. 02-2236-III (Davidson County Chancery Ct., Tenn.); *State v. Michael Wayne Nance*, 95-B-2461-4 (Ga. Superior Ct.); *Ralph Baze & Thomas Bowling v. Rees*, 04-CI-01094 (Franklin County Circuit Ct., Ky.); *Taylor v. Crawford*, 05-4173-CV-C-FJG (W.D. Mo.); and *State v. Nathanial Code*, No.138860, (1st Judicial D. Ct. of LA for Caddo Parish 2003). I have filed affidavits that have

been reviewed by courts in the above states and also in California, Pennsylvania, New York, Alabama, North Carolina, South Carolina, Ohio, Oklahoma, Texas, Missouri, and by the United States Supreme Court.

3. During court proceedings, I have heard testimony from prison wardens who are responsible for conducting executions by lethal injection. I have testified before the Nebraska Senate Judiciary Committee regarding proposed legislation to adopt lethal injection. I have testified before the Pennsylvania Senate Judiciary Committee regarding proposed legislation to prohibit the use of pancuronium and the other neuromuscular blockers in Pennsylvania's lethal injection protocol. My research regarding lethal injection has involved both extensive conversations with recognized experts in the field of lethal injection, toxicology, and forensic pathology and the exchange of personal correspondence with the individuals responsible for introducing lethal injection as a method of execution in Oklahoma (the first state to formulate the procedure) and in the United States.

4. My qualifications are further detailed in my curriculum vitae, a copy of which is attached hereto as Exhibit A and incorporated by reference as if fully rewritten herein.

5. I have been asked by counsel for Edward Lee Beets to review the procedures concerning lethal injection currently in place in Nevada to assess whether there is a risk of the inmate experiencing pain and suffering while the lethal injection is administered. I hold all opinions expressed in this Declaration to a reasonable degree of medical certainty, except as specifically noted at the end of paragraph 35, where I make a speculative comment.

6. I have reviewed the Nevada Department of Corrections' "Confidential Execution Manual."

7. In addition, I have reviewed numerous documents, including execution logs, for California's executions. Comparable information about executions by lethal injection in Nevada is unavailable. However, Nevada's lethal injection protocol is similar to that used in California prior to the proceedings in *Morales v. Hickman.*

8 I have also reviewed Nev. Rev. Stat. § 638.005 and N.A.C. §§ 638.450 et. seq. which pertain to the training for those performing euthanasia on animals, as well as statutes pertaining to euthanasia of animals from the states of: California, Florida, Georgia, Maine, Maryland, Massachusetts, New Jersey, New York, Oklahoma, Tennessee, Texas, Connecticut, Delaware, Illinois, Kansas, Kentucky, Louisiana, Missouri, Rhode Island and South Carolina. I have also reviewed the 2000 Report of the Panel on Euthanasia of the American Veterinary Medical Association, attached hereto as Exhibit B, the American Society of Anesthesiologist's Practice Advisory for Intraoperative Awareness and Brain Function Monitoring, attached hereto as Exhibit C, and the American Society of Anesthesiologist's Standards for Basic Anesthetic Monitoring, attached hereto as Exhibit D.

9. Based upon my review of this material and my knowledge of and experience in the field of anesthesiology, I have formed several conclusions with respect to the protocol of the Nevada Department of Corrections ("NDOC") for carrying out lethal injections. These conclusions arise both from the details disclosed in the materials I have reviewed and from medically relevant, logical inferences drawn from the omission of details in those materials (e.g., details regarding the training of the personnel involved; details of all of the medical equipment used; and details of the precise methods by which the personnel involved use the equipment to carry out an execution by lethal injection).

A. **NDOC's Lethal Injection Protocol**

10. NDOC's lethal injection protocol calls for the administration of 5 grams of sodium thiopental, 20 milligrams of pancuronium bromide (Pavulon), and 160 milliequivalents of potassium chloride. Broadly speaking, the sodium thiopental is intended to serve as an anesthetic, rendering the inmate unconscious for the duration of the execution. Five grams of sodium thiopental is a massive, and potentially lethal, dose. The pancuronium bromide paralyzes the inmate's voluntary muscles, including those of his chest and diaphragm. Pancuronium is not an anesthetic or sedative drug, and it does not affect consciousness. Potassium chloride is a salt solution that, when rapidly administered in high concentrations, induces cardiac arrest.

11. Although the successful delivery into the circulation of 5 grams of sodium thiopental and 20 milligrams of pancuronium would be lethal, it is important to understand that the lethality of sodium thiopental and pancuronium is due to respiratory arrest, which takes several minutes to ensue and does not typically occur prior to the administration of potassium. In the execution sequence, before death is caused by respiratory arrest from sodium thiopental and pancuronium, death is caused by cardiac arrest caused by potassium. I base this opinion, that the potassium and not the pancuronium or sodium thiopental is responsible for the death of prisoners during lethal injection, on the following:

A) Review of records from EKGs from lethal injection procedures conducted in other states. During lethal injection, cardiac activity consistent with generating perfusion persists through the administration of sodium thiopental and pancuronium and only stops after potassium has been administered. The relatively sudden cessation of organized EKG activity is not consistent with a cessation of circulation due to administration of sodium thiopental and/or pancuronium and is consistent with cessation of

circulation after the administration of a large dose of potassium chloride.

B) Properties of Sodium Thiopental and Pancuronium. Sodium thiopental and pancuronium exert their effects by interacting with molecular targets in the nervous system and on muscle cells in a manner that induces unconsciousness and stops breathing. Sodium thiopental and pancuronium, unlike other chemicals such as cyanide, do not kill cells or tissues, and are useful to clinicians precisely because they do not kill or harm cells or tissues. The reason that sodium thiopental and pancuronium can cause death is that they cause the prisoner to stop breathing. Failure to breathe will result in brain damage, brain death, and cardiac arrest as the level of oxygen in the blood declines over time. These processes take a varying amount of time, depending on many factors. Physicians generally use four minutes of not breathing as the approximate benchmark time after which irreversible brain damage from lack of oxygen occurs, and death typically occurs some number of minutes after the onset of brain damage. It is worth noting, however, that this general figure of four minutes is often used in the context of cardiac arrest, in which there is no circulation of blood through the brain. If some level of blood circulation persists, it is very likely that brain damage and brain death would take longer than four minutes.

In the context of lethal injection, sodium thiopental and pancuronium, if successfully delivered into the circulation in large doses, would indeed each be lethal, because they would stop the inmate's breathing. However, as described above, in execution by lethal injection as

practiced by Nevada and other states the administration of potassium and death precede any cardiac arrest that would be caused by sodium thiopental and pancuronium.

12. Intravenous injection of concentrated potassium chloride solution causes excruciating pain. The vessel walls of veins are richly supplied with sensory nerve fibers that are highly sensitive to potassium ions. The intravenous administration of concentrated potassium in doses intended to cause death therefore would be extraordinarily painful. NDOC's selection of potassium chloride to cause cardiac arrest needlessly increases the risk that a prisoner will experience excruciating pain prior to execution. There exist, however, alternative chemicals that do not activate the nerves in the vessel walls of the veins in the way that potassium chloride does. Despite the fact that the statute authorizing lethal injection in Nevada does not specify or require the use of potassium, NDOC has failed to choose a chemical that would cause death in a painless manner.

13. Thus, NDOC chose the means of causing death by choosing a medication (potassium chloride) that causes extreme pain upon administration, instead of selecting available, equally effective yet essentially painless medications for stopping the heart. In so doing, NDOC has taken on the responsibility of ensuring, through all reasonable and feasible steps, that the prisoner is sufficiently anesthetized and cannot experience the pain of potassium chloride injection.

14. The provision of anesthesia has become a mandatory standard of care whenever a patient is to be subjected to a painful procedure. Throughout the civilized world, the United States, and Nevada, whenever a patient is required to undergo a painful procedure, it is the standard of care to provide some form of anesthesia. Circumstances arise in which prisoners in Nevada require surgery, and in many instances the surgery requires the provision of general

anesthesia. In these circumstances general anesthesia is provided, and it is provided by an individual with specific training and qualifications in the field of anesthesiology. It is critical to understand that the great majority of physicians and nurses and other health care professionals do not possess the requisite training, skills, experience, and credentials to provide general anesthesia. It would be unconscionable to forcibly subject any person, including a prisoner in Nevada, to a planned and anticipated highly painful procedure without first providing an appropriate anesthetic, and it would be unconscionable to allow personnel who are not properly trained in the field of anesthesiology to attempt to provide or supervise this anesthetic care.

15. As a living person who is about to be subjected to the excruciating pain of potassium injection, it is imperative that all prisoners undergoing lethal injection be provided with adequate anesthesia. This imperative is of the same order as the imperative to provide adequate anesthesia for any Nevada prisoner requiring general anesthesia (or any type of anesthesia) before undergoing painful surgery. Given that the injection of potassium is a scheduled and premeditated event that is known without any doubt to be extraordinarily painful, it would be unconscionable and barbaric for potassium injection to take place without the provision of sufficient general anesthesia to ensure that the prisoner is rendered and maintained unconscious throughout the procedure, and it would be unconscionable to allow personnel who are not properly trained in the field of anesthesiology to attempt to provide or supervise this anesthetic care.

B. Failure to Adhere to a Medical Standard of Care in Administering Anesthesia

16. It is my opinion to a reasonable degree of medical certainty that the lethal injection procedures selected for use in Nevada and used elsewhere subject the prisoner to an increased and unnecessary risk of experiencing excruciating pain in the course of execution.

Because of the potential for an excruciating death created by the use of potassium chloride, it is necessary to induce and maintain an appropriate and deep plane of anesthesia. The circumstances and environment under which anesthesia is to be induced and maintained according to NDOC's execution manual create, needlessly, a significant risk that inmates will suffer the pain that accompanies the injection of potassium chloride.

17. Presumably because of the excruciating pain evoked by potassium, lethal injection protocols like Nevada's plan for the provision of general anesthesia by the inclusion of sodium thiopental. When successfully delivered into the circulation in sufficient quantities, sodium thiopental causes sufficient depression of the nervous system to permit excruciatingly painful procedures to be performed without causing discomfort or distress. Failure to successfully deliver into the circulation a sufficient dose of sodium thiopental would result in a failure to achieve adequate anesthetic depth and thus failure to block the excruciating pain of potassium administration.

18. NDOC's procedures do not comply with the medical standard of care for inducing and maintaining anesthesia prior to and during a painful procedure. Likewise, NDOC's procedures are not compliant with the guidelines set forth by the American Veterinary Medical Association for the euthanasia of animals. Further, NDOC has made insufficient preparation for the real possibility, encountered in many other jurisdictions, and planned for in those jurisdictions, that peripheral IV access cannot be successfully established.

1. The Dangers of Using Sodium Thiopental as an Anesthetic

19. A major concern I have based on what I know about NDOC's lethal injection protocol relates to the use of sodium thiopental. Sodium thiopental is an ultrashort-acting barbiturate with a relatively short shelf life in liquid form. Sodium thiopental is distributed in

powder form to increase its shelf life; it must be mixed into a liquid solution by trained personnel before it can be injected.

20. When anesthesiologists use sodium thiopental, we do so for the purposes of temporarily anesthetizing patients for sufficient time to intubate the trachea and institute mechanical support of ventilation and respiration. Once this has been achieved, additional drugs are administered to maintain a "surgical depth" or "surgical plane" of anesthesia (i.e., a level of anesthesia deep enough to ensure that a surgical patient feels no pain and is unconscious). The medical utility of sodium thiopental derives from its ultrashort-acting properties: if unanticipated obstacles hinder or prevent successful intubation, patients will likely quickly regain consciousness and resume ventilation and respiration on their own.

21. The benefits of sodium thiopental in the operating room engender serious risks in the execution chamber. Although the full five grams of sodium thiopental, if properly administered into the prisoner's bloodstream, would be more than sufficient to cause unconsciousness and, eventually, death, if no resuscitation efforts were made, my research into executions by lethal injection strongly indicates that executions have occurred where the full dose of sodium thiopental listed in the protocol was not fully and properly administered. If an inmate does not receive the full dose of sodium thiopental because of errors or problems in administering the drug, the inmate might not be rendered unconscious and unable to feel pain, or alternatively might, because of the short-acting nature of sodium thiopental, regain consciousness during the execution.

22. Thus, the concerns raised in this affidavit apply regardless of the size of the dose of sodium thiopental that is prescribed under the protocol. The level of anesthesia, if any, achieved in each individual inmate depends on the amount that is successfully administered, although other factors such as the inmate's weight and sensitivity/resistance to barbiturates are

also relevant. Many foreseeable situations exist in which human or technical errors could result in the failure to successfully administer the intended dose. NDOC's execution manual both fosters these potential problems and fails to provide adequate instruction for preventing or rectifying these situations, and it does these things needlessly and without legitimate reason. Examples of problems that could prevent proper administration of sodium thiopental include, but are not limited to, the following:

a) Errors in Preparation. Sodium thiopental is delivered in powdered form and must be mixed into an aqueous solution prior to administration. This preparation requires the correct application of pharmaceutical knowledge and familiarity with terminology and abbreviations. Calculations are also required, particularly if the protocol requires the use of a concentration of drug that differs from that which is normally used.

b) Error in Labeling of Syringes. NDOC's execution manual states the syringes will be "clearly marked," but does not specify a standard order in which the syringes will be prepared or how they will be labeled. This could cause confusion in creating the syringes, leading to mislabeling, which, depending on the labeling system used, might not be detected and corrected later in the process.

c) Error in Selecting the Correct Syringe during the sequence of administration.

d) Error in Correctly Injecting the Drug into the Intravenous Line. Nevada's execution manual fails to identify the person(s) responsible for injecting the lethal drugs and further fails to identify their qualifications.

e) The IV Tubing May Leak. An "IV setup" consists of multiple components that are assembled by hand prior to use. If, as is the practice in Nevada, the personnel who are

injecting the drugs are not at the bedside but are instead in a different room or part of the room, multiple IV extension sets need to be inserted between the inmate and the administration site. Any of these connections may loosen and leak. In clinical practice, it is important to maintain visual surveillance of the full extent of IV tubing so that such leaks may be detected. Nevada's practice, by which the executioner(s) is in a separate room with no visual surveillance precludes detection of any leak that may occur.

f) Incorrect Insertion of the Catheter. If the catheter is not properly placed in a vein, the sodium thiopental will enter the tissue surrounding the vein but will not be delivered to the central nervous system and will not render the inmate unconscious. This condition, known as infiltration, occurs with regularity in the clinical setting. Recognition of infiltration requires continued surveillance of the IV site during the injection, and that surveillance should be performed by the individual who is performing the injection so as to permit correlation between visual observation and tactile feedback from the plunger of the syringe.

g) Migration of the Catheter. Even if properly inserted, the catheter tip may move or migrate, so that at the time of injection it is not within the vein. This would result in infiltration, and therefore a failure to deliver the drug to the inmate's circulation and failure to render the inmate unconscious.

h) Perforation or Rupture or Leakage of the Vein. During the insertion of the catheter, the wall of the vein can be perforated or weakened, so that during the injection some or all of the drug leaves the vein and enters the surrounding tissue. The likelihood of rupture occurring is increased if too much pressure is applied to the plunger of the syringe during injection, because a high pressure injection results in a high velocity jet of drug in the vein that can penetrate or tear the vessel wall.

i) Excessive Pressure on the Syringe Plunger. Even without damage or perforation of the vein during insertion of the catheter, excessive pressure on the syringe plunger during injection can result in tearing, rupture, and leakage of the vein due to the high velocity jet that exits the tip of the catheter. Should this occur, the drug would not enter the circulation and would therefore fail to render the inmate unconscious.

j) Securing the Catheter. After insertion, catheters must be properly secured by the use of tape, adhesive material, or suture. Movement by the inmate, even if restrained by straps, or traction on the IV tubing may result in the dislodging of the catheter.

k) Failure to Properly Administer Flush Solutions Between Injections of Drugs. Solutions of paralytic agents such as pancuronium cause sodium thiopental to precipitate out of solution on contact, thereby interfering with the delivery of the drug to the inmate and to the central nervous system. NDOC's manual does not specify if, how, or when the lines will be flushed.

l) Failure to Properly Loosen or Remove the Tourniquet from the Arm or Leg after placement of the IV catheter will delay or inhibit the delivery of the drugs by the circulation to the central nervous system. This may cause a failure of the sodium thiopental to render and maintain the inmate in a state of unconsciousness.

m) Impaired Delivery Due to Restraining Straps. Restraining straps may act as tourniquets and thereby impede or inhibit the delivery of drugs by the circulation to the central nervous system. This may cause a failure of the sodium thiopental to render and maintain the inmate in a state of unconsciousness. Even if the IV is checked for "free flow" of the intravenous

fluid prior to commencing injection, a small movement within the restraints on the part of the inmate could compress the vein and result in impaired delivery of the drug.

2. The Need for Adequate Training in Administering Anesthesia

23. Because of these foreseeable problems in administering anesthesia, in Nevada and elsewhere in the United States, the provision of anesthetic care is performed only by personnel with advanced training in the medical subspecialty of Anesthesiology. This is because the administration of anesthetic care is complex and risky, and can only be safely performed by individuals who have completed the extensive requisite training to permit them to provide anesthesia services. Failure to properly administer a general anesthetic not only creates a high risk of medical complications including death and brain damage, but also is recognized to engender the risk of inadequate anesthesia, resulting in the awakening of patients during surgery, a dreaded complication known as "intraoperative awareness." The risks of intraoperative awareness are so grave that, in October 2005, the American Society of Anesthesiologists published a new practice advisory on the subject of intraoperative awareness. If the individual providing anesthesia care is inadequately trained or experienced, the risk of these complications is enormously increased. In Nevada and elsewhere in the United States, general anesthesia is administered by physicians who have completed residency training in the specialty of Anesthesiology, and by nurses who have undergone the requisite training to become Certified Registered Nurse Anesthetists (CRNAs). Physicians and nurses who have not completed the requisite training to become anesthesiologists or CRNAs are not permitted to provide general anesthesia.

24. In my opinion, individuals providing general anesthesia in the Nevada State Prison should not be held to a different or lower standard than is set forth for individuals providing general anesthesia in any other setting in Nevada. Specifically, the individuals

providing general anesthesia within Nevada State Prison should possess the experience and proficiency of anesthesiologists and/or CRNAs. Conversely, a physician who is not an anesthesiologist or a nurse who is not a CRNA should not be permitted to provide general anesthesia within Nevada State Prison (or anywhere else in Nevada).

25. NDOC's execution protocol fails to specify whether the person or persons administering the lethal injection have any training in administering anesthesia, or, if personnel are given training, what that training might be. The absence of any details as to the training, certification, or qualifications of injection personnel raises critical questions about the degree to which condemned inmates risk suffering excruciating pain during the lethal injection procedure. The great majority of nurses are not trained in the use of ultrashort-acting barbiturates; indeed, this class of drugs is essentially only used by a very select group of nurses who have obtained significant experience in intensive care units and as nurse anesthetists. Very few paramedics are trained or experienced in the use of ultrashort-acting barbiturates. Based on my medical training and experience, and based upon my research of lethal injection procedures and practices, inadequacies in these areas elevate the risk that the lethal injection procedure will cause the condemned to suffer excruciating pain during the execution process. Failure to require that the person or persons administering the lethal injection have training equivalent to that of an anesthesiologist or a CRNA compounds the risk that inmates will suffer excruciating pain during their executions.

3. NDOC's Failure to Account for Foreseeable Problems in Anesthesia Administration

26. In addition to lacking any policy on the training necessary to perform a lethal injection, NDOC's execution manual imposes conditions that exacerbate the foreseeable risks of improper anesthesia administration described above, and fails to provide any procedures for

dealing with these risks. Perhaps most disturbingly, Nevada's lethal injection practice prevents any type of effective monitoring of the inmate's condition or whether he is anesthetized and unconscious. After the IV lines are inserted into the inmate but before the administration of the sodium thiopental, the execution chamber is closed and the prisoner is left alone in the chamber for the duration of the execution. Nevada's practice is that all prison personnel and others involved in the execution will be in a separate room. There is no window through which the executioner(s) can observe the inmate as the series of drugs is injected. This falls below the standard of care. Accepted medical practice dictates that trained personnel monitor the IV lines and the flow of anesthesia into the veins through visual and tactile observation and examination. The lack of any qualified personnel present in the chamber during the execution thwarts the execution personnel from taking the standard and necessary measures to reasonably ensure that the sodium thiopental is properly flowing into the inmate and that he is properly anesthetized prior to the administration of the pancuronium and potassium.

27. In my opinion, having a properly trained and credentialed individual examine the inmate after the administration of the sodium thiopental (but prior to the administration of pancuronium) to verify that the inmate is completely unconscious would substantially mitigate the danger that the inmate will suffer excruciating pain during his execution. As discussed later in this affidavit, this is the standard of care, and in many states the law, that is set forth for dogs and cats and other household pets when they are subjected to euthanasia by potassium injection. Yet NDOC's execution manual does not provide for such verification, and indeed Nevada practice actively prevents the person or persons administering the lethal injection from determining whether or not the inmate remains conscious by requiring that all of the drugs must be administered remotely, from another room without even visual surveillance.

28. By requiring that the drugs be administered remotely, Nevada practice

necessitates the use of multiple connection sites in the IV tubing. This unnecessarily increases the risk of leakage and/or pinching of the tubes, and therefore creates a greater risk that the inmate will not be properly sedated. Any reasonable standard of care would require a system to be in place to ensure that the prisoner is properly anesthetized.

29. Other than stating "the lethal medication will be administered at a rapid rate," NDOC's execution manual provides no specifications regarding the timing of the administration of the drugs, thereby compounding the risks described in this Declaration. This concern is greatly amplified by the use of an ultrashort-acting barbiturate and is borne out by a review of the execution records from California. In each of the executions, the time between administrations of the three drugs varied for no apparent reason. The lack of a defined schedule for the administration of the three drugs increases the risk that the sedative effect of the sodium thiopental will wear off, should the inmate not receive the full dose.

30. Nevada's lethal injection protocol does not account for procedures designed to ensure the proper preparation of the drugs used. I have not seen details regarding the credentials, certification, experience, or proficiency of the personnel who will be responsible for the mixing of the sodium thiopental from powder form, or for the drawing up of the drugs into the syringes. Preparation of drugs, particularly for intravenous use, is a technical task requiring significant training in pharmaceutical concepts and calculations. It is my opinion based on my review of lethal execution procedures in states that have disclosed more detailed information than what I have seen about Nevada's procedures, that there exist many risks associated with drug preparation that, if not properly accounted for, further elevate the risk that the drug will not be properly administered and the inmate will consciously experience excruciating pain during the lethal injection procedures.

31. The altering of established medical procedures without adequate medical review and research, by untrained personnel, causes great concern about the structure of the lethal injection protocol and its medical legitimacy. There is no indication of how Nevada's execution protocol was developed, who was consulted, what procedures were considered and why. The protocol may be something the Warden developed alone, or in consultation with other corrections personnel, some of whom may or may not have any medical training, or any specialized knowledge of anesthetic literature and practice. Appropriate mechanisms for medical review, and standardization of the implementation and amendment process, are critical features in any medical protocol so that the medical professionals and the public can be assured that proper and humane procedures are in place and being followed. Indeed, in other states, physicians and other medical personnel play a role in ensuring that any protocol is consistent with basic medical standards of care and humaneness. Otherwise, the process is subject and prone to ad hoc administration and error, if not gross negligence, or worse, an alteration of the process so as to inflict as much agony as possible. With lethal injection, such concerns are highly elevated.

32. There are no procedures contained within NDOC's execution manual for the resuscitation of the inmate once the sodium thiopental is administered. To the contrary, the manual states that "once infusion of the lethal injection has begun . . . the execution cannot be stopped." This would foreclose the possibility of altering the course of an execution in the event of legal relief. Any time up until the potassium chloride is administered, the prisoner could be readily resuscitated given the appropriately trained personnel and routine resuscitation medication and equipment. If this were to occur after the potassium chloride was administered, resuscitation would be more challenging but still possible. Resuscitation would require equipment close-by, and properly credentialed personnel, neither of which are specified in the execution manual.

33. Based on my medical training and experience, and based on my research into lethal injection procedures and practices, it is my opinion to a reasonable degree of medical certainty that any reliable, humane lethal injection procedure must account for the foreseeable circumstance of a condemned inmate having physical characteristics that prevent intravenous access from being obtained by a needle piercing the skin and entering a superficial vein suitable for the reliable delivery of drugs. There have been multiple lethal injections in which this problem has arisen from a variety of circumstances. Some of these circumstances could be due to conditions including obesity, corticosteroid treatment, history of intravenous drug use, history of undergoing chemotherapy. Additionally, some people happen to have veins that are too small or deep to permit peripheral access. It is often not possible to anticipate difficult intravenous access situations, and there are multiple examples of executions in which the personnel placing the IVs struggled to obtain peripheral IV access and eventually abandoned the effort. NDOC's execution manual is deficient in its failure to plan for the foreseeable possibility that peripheral IV access can not be obtained.

34. In this setting, state lethal injection protocols typically specify the use of a "cut-down" procedure to access a vein adequate for the reliable infusion of the lethal drugs. Aside from specifying in the "List of Needed Equipment and Materials," which "may vary," a "sterile cut-down tray if necessary," Nevada's lethal injection execution protocol contains no reference to plans for dealing with the foreseeable circumstance wherein peripheral intravenous access cannot be obtained in the arm or leg. No information regarding the training, experience, expertise, credentials, certification, or proficiency of the personnel who would perform such a "cut down" procedure is listed in the Nevada lethal injection protocol. In this regard, NDOC's lethal injection protocol is deficient in comparison to those of other states that I have reviewed. This complicated medical procedure requires equipment and skill that are not accounted for in the execution manual. It has a very high probability of not proceeding properly in the absence of

adequately trained and experienced personnel, and without the necessary equipment. If done improperly, the "cut-down" process can result in very serious complications including severe hemorrhage (bleeding), pneumothorax (collapse of a lung which may cause suffocation), and severe pain. It is well documented that lethal injection procedures in other states have at times required the use of a central intravenous line. NDOC has not, to my knowledge, released information about the need for central intravenous access during prior executions, and therefore it is not possible to make any assessment about whether the necessary safeguards have been set in place to ensure that the procedure is reasonably humane.

35. This concern over the challenges of IV placement has been demonstrated in numerous cases. For example, most recently, during the execution of Joseph Clark in Ohio, difficulties in finding a vein delayed the execution by almost 90 minutes. *See* Andrew Welsh-Huggins, *IV Flaco Led Killer to Ask for Plan B*, AP (May 12, 2006), attached hereto as Exhibit E. The execution team struggled for several minutes to find usable vein. The team placed a "shunt" in Clark's left arm, but the vein "collapsed". Subsequently, the team placed a "shunt" in Clark's right arm, but mistakenly attempted to administer the lethal drugs through the IV in the left arm where the vein had already "collapsed". The difficulties prompted Clark to sit up and tell his executioners "It don't work" and to ask "Can you just give me something by mouth to end this?" Similar problems occurred during the execution of Stanley "Tookie" Williams, the injection team took 12 minutes to insert the IV lines. The first line was placed quickly but spurted blood, and the staff struggled for 11 minutes to insert the second line, having so much difficulty that Williams asked whether they were "doing that right." *See The Execution of Stanley Tookie Williams*, SFGate.com (Dec. 14, 2005), attached hereto as Exhibit F. The difficulty of the challenge presented to the IV team is evidenced by the comment that "By 12:10 a.m., the medical tech's lips were tight and white and sweat was pooling on her forehead as she probed Williams' arm." Similarly, the execution log of Donald Beardslee's execution indicates that the

second IV line was inserted with "difficulty," and the time entries indicate that it took 12 minutes to insert the second line, which is consistent with encountering problems in inserting the IV. When it proceeds smoothly, placement of a peripheral IV should, in my experience, take on the order of two minutes or less. In the execution of William Bonin, it took the staff assigned anywhere between 18 and 27 minutes to fashion the IV lines (the records are unclear as to this point). This is an unusually long period of time for an experienced and properly trained professional. In the execution of Stephen Anderson on January 29, 2002, one of the persons who attempted to secure an IV was unable to do so without causing significant bleeding and the need to remove his gloves. Again, this indicates that the process is a difficult one and that it is necessary that the persons doing it are properly trained and experienced. As is widely recognized in the medical community, administration of intravenous medications and the management of intravenous systems are complex endeavors. While speculative and not evidence-based, it is my opinion that it is likely that IV placement is rendered more difficult in the context of executions because the inmates are often in a very anxious status, which causes the release of epinephrine (adrenalin) and norepinephrine, thereby causing constriction (narrowing) of blood vessels (including veins). When veins are constricted/narrowed it can be difficult or impossible to insert an IV catheter. This is the best explanation I can provide for the otherwise unexplained extremely high incidence of difficult or failed peripheral IV placement, in individuals lacking known risk factors for difficult IV access.

36. It is my further opinion that to ensure a lethal injection without substantial risks of inflicting severe pain and suffering, there must be proper procedures that are clear and consistent: there must be qualified personnel to ensure that anesthesia has been achieved prior to the administration of pancuronium bromide and potassium chloride, there must be qualified personnel to select chemicals and dosages, set up and load the syringes, administer "pre-injections," insert the IV catheter, and perform the other tasks required by such procedures; and

there must be adequate inspection and testing of the equipment and apparatus by qualified personnel. The Nevada Department of Corrections' written procedures for implementing lethal injection, to the extent that they have been made available, provide for none of the above.

C. The Use of Pancuronium Bromide

37. Nevada's use of the drug pancuronium bromide serves no rational or legitimate purpose and compounds the risk that an inmate may suffer excruciating pain during his execution. Pancuronium paralyzes all voluntary muscles, but does not affect sensation, consciousness, cognition, or the ability to feel pain and suffocation. Because the sodium thiopental and potassium chloride would in themselves be sufficient to cause death, and the potassium is administered well before death would result from the pancuronium alone, it is my opinion held to a reasonable degree of medical certainty that there would be no rational place in the protocol for pancuronium as the lethal amount of potassium chloride is administered.

38. Pancuronium bromide is a neuromuscular blocking agent. Its effect is to render the muscles unable to contract but it does not affect the brain or the nerves. It is used in surgery to ensure that there is no movement and that the patient is securely paralyzed so that surgery can be performed without contraction of the muscles. In surgery, pancuronium bromide is not administered until the patient is adequately anesthetized. The anesthetic drugs must first be administered so that the patient is unconscious and does not feel, see, or perceive the procedure. This can be determined by a trained medical professional, either a physician anesthesiologist or a nurse anesthetist, who provides close and vigilant monitoring of the patient, their vital signs, and various diagnostic indicators of anesthetic depth. NDOC's execution manual, to the extent disclosed, fails to provide an assurance that anesthetic depth will be properly assessed prior to the administration of pancuronium bromide.

39. If sodium thiopental is not properly administered in a dose sufficient to cause the loss of consciousness for the duration of the execution procedure, then it is my opinion held to a reasonable degree of medical certainty that the use of pancuronium places the condemned inmate at risk for consciously experiencing paralysis, suffocation and the excruciating pain of the intravenous injection of high dose potassium chloride.

40. If administered alone, a lethal dose of pancuronium would not immediately cause a condemned inmate to lose consciousness. It would totally immobilize the inmate by paralyzing all voluntary muscles and the diaphragm, causing the inmate to suffocate to death while experiencing an intense, conscious desire to inhale. Ultimately, consciousness would be lost, but it would not be lost as an immediate and direct result of the pancuronium. Rather, the loss of consciousness would be due to suffocation, and would be preceded by the torment and agony caused by suffocation. This period of torturous suffocation would be expected to last at least several minutes and would only be relieved by the onset of suffocation-induced unconsciousness or by death from potassium chloride.

41. Because the administration of a paralyzing dose of pancuronium bromide to a conscious person would necessarily cause excruciating suffering, it would be unconscionable to administer pancuronium without first ensuring that the induction of general anesthesia had successfully achieved the necessary anesthetic depth.

42. Based on the information available to me, it is my opinion held to a reasonable degree of medical certainty that Nevada's lethal injection protocol creates an unacceptable risk that the inmate will not be anesthetized to the point of being unconscious and unaware of pain for the duration of the execution procedure. If the inmate is not first successfully anesthetized, then it is my opinion to a reasonable degree of medical certainty that the pancuronium will

paralyze all voluntary muscles and mask external, physical indications of the excruciating pain being experienced by the inmate during the process of suffocating (caused by the pancuronium) and having a cardiac arrest (caused by the potassium chloride).

43. It is my understanding that NDOC's execution protocol requires the presence of six to nine official witnesses to the execution and permits media witnesses to the execution. It is my opinion based on a reasonable degree of medical certainty that pancuronium, when properly and successfully administered, effectively nullifies the ability of witnesses to discern whether or not the condemned prisoner is experiencing a peaceful or agonizing death. Regardless of the experience of the condemned prisoner, whether he or she is deeply unconscious or experiencing the excruciation of suffocation, paralysis, and potassium injection, he or she will appear to witnesses to be serene and peaceful due to the relaxation and immobilization of the facial and other skeletal muscles. The use of pancuronium, in my opinion, therefore prevents the press from fulfilling its essential function of informing the citizens, officials, and courts of Nevada about whether execution by lethal injection is conducted in Nevada State Prison in a manner that is constitutionally compliant and humane.

44. The doses of sodium thiopental and potassium chloride are lethal doses. Therefore, it is unnecessary to administer pancuronium bromide in the course of an execution when it is quickly followed by a lethal dose of potassium chloride. It serves no legitimate purpose and only places a chemical veil on the process that prevents an adequate assessment of whether or not the condemned is suffering in agony, and greatly increases the risks that such agony will ensue. Removal of pancuronium from the protocol would eliminate the risk of conscious paralysis from occurring. It would also eliminate the risk that an inhumane execution would appear humane to witnesses. Finally, removal of pancuronium would vastly reduce the possibility that the citizens, officials, and courts of Nevada could be inadvertently misled by

media reports describing a peaceful-appearing execution when in fact the prisoner could be experiencing excruciating suffering.

D. Consequences of Improper Anesthesia Administration

45. Execution records from California indicate that four out of the six inmates executed in California since 2000 continued to display activity and behavior that is inconsistent with the successful administration of 5 grams of thiopental, the amount required under California's lethal injection protocol. Five grams of thiopental, the dose required by the California protocol, is a massive dose that, if successfully administered, far exceeds the amount necessary to completely arrest respiratory activity in any prisoner. I therefore can provide no medical explanation for the inmates' continued breathing other than that the thiopental was not administered in its entirety. If the full dose of thiopental was not administered successfully – as is strongly suggested by the inmates' continued breathing – those inmates faced a significant risk of remaining conscious or regaining consciousness during the lethal injection procedure. Importantly, a person who is breathing while under general anesthesia cannot be deeply anesthetized, and may well be awakened by a painful stimulation such as a surgical incision or the administration of potassium.

46. The handwritten records of Stanley "Tookie" Williams' execution indicate that Mr. Williams did not stop breathing until 12:34, upon the injection of the potassium chloride, 12 minutes after the thiopental was injected. Thus, the thiopental did not have the effect on Mr. Williams' brain and respiratory activity that would be expected with a high degree of certainty from the delivery into the circulation of the full 5-gram dose of thiopental.

47. The execution log of Clarence Ray Allen states that Mr. Allen continued breathing for 9 minutes after the delivery of the thiopental. Again, 5 grams of thiopental, if

successfully delivered into the circulation, simply should not take 9 minutes to ablate cerebral electrical activity and respiratory activity.

48. The January 29, 2002 execution log of Stephen Wayne Anderson, reveals that Mr. Anderson continued breathing until 12:22, 5 minutes after the thiopental was administered. Again, this persistent respiratory activity is not consistent with the expected effect of 5 grams of thiopental, which would be to stop all visible respiratory activity within a minute of its delivery into the circulation.

49. The March 15, 2000 execution log of Darrell Keith Rich, states that Mr. Rich's respirations ceased at 12:08, with the administration of the pancuronium, but that Mr. Rich had "chest movements" lasting from 12:09 to 12:10. These chest movements, beginning after Mr. Rich had ostensibly stopped breathing (and while he was still alive, as shown by his heart rate of 110 beats per minute), and 3 minutes after the administration of the thiopental, are again inconsistent with successful administration of the thiopental. The chest movements are consistent, however, with an attempt to fight against the accruing paralytic effect of the pancuronium. Had the 5-gram dose of thiopental reached Mr. Rich and had the expected effect, he would not have been able to fight against the pancuronium by attempting to breathe, nor would he even have been aware of the effect of the pancuronium. Indeed, because 5 grams of thiopental would have arrested all cerebral activity, including all respiratory drive, there would have been no effort on Mr. Rich's part to attempt to breathe during the onset of the pancuronium.

E. Nevada's Execution Protocol Falls Below the Minimum Standards Mandated for Veterinary Euthanasia

50. The American Veterinary Medical Association (AVMA) states that when potassium chloride is to be used as a euthanasia agent, the animals must be under a surgical plane

of anesthesia and the personnel performing the euthanasia must be properly trained to assess the depth of anesthesia. The AVMA panel specifically states that the animal must be in a surgical plane of anesthesia characterized not simply by loss of consciousness, but also by "loss of reflex muscle response and loss of response to noxious stimuli." It is difficult to understand why the NDOC would chose, at its discretion, to use potassium to execute prisoners and would then fail to adhere to the basic requirements set forth by the AVMA to ensure that animals do not experience the excruciating pain of potassium injection during euthanasia.

51. In *Beardslee v. Woodford*, the Ninth Circuit recognized that nineteen states have enacted statutes that, like the AVMA Report, mandate the exclusive use of a sedative in the euthanasia of animals. Although Nevada has not yet enacted such a statute, Nevada law expressly contemplates the use of sodium pentobarbital and requires that personnel who perform euthanasia of animals must be properly trained in the procedure. No such requirement exists in NDOC's execution manual.

Conclusion

52. Based on my research into methods of lethal injection used by various states and the federal government, and based on my training and experience as a medical doctor specializing in anesthesiology, it is my opinion based on a reasonable degree of medical certainty that, given the apparent absence of a central role for a properly trained medical or veterinary professional in NDOC's execution procedure, the chemicals used, the lack of adequately defined roles and procedures, and the failure to properly account for foreseeable risks, the lethal injection procedure Nevada employs creates medically unacceptable risks of inflicting excruciating pain and suffering on inmates during the lethal injection procedure. All of these problems could easily be addressed, and indeed have been addressed for the euthanasia of dogs and cats. It is difficult to understand why NDOC has failed to address these problems and has failed to meet the

minimum standards set forth for veterinary euthanasia.

53. In addition, in order to more fully and fairly assess the impact of the failings of Nevada's execution protocol, it is necessary to obtain all the records and logs used, and all official witness statements from prior executions, as well as the full rules and regulations devised by NDOC for lethal injection. This would include identifying the qualifications, experience and training of those persons who apply the IVs and who administer and monitor the injection.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge and that this declaration was executed on May 16, 2006 in New York City, New York.

Mark J. S. Heath, M.D.

Attachment A

Curriculum Vitae

1) Date of preparation: December 19, 2004

2) Name: Mark J. S. Heath

Birth date: March 28, 1960
Birthplace: New York, NY
Citizenship: United States, United Kingdom

3) Academic Training:

Harvard University	B.A., Biology, 1983
University of North Carolina, Chapel Hill	M.D., 1987
Medical License	New York: 177101-1

4) Traineeship:

1987 – 1988 Internship, Internal Medicine, George Washington University Hospital, Washington, DC.

1988 – 1991 Residency, Anesthesiology, Columbia College of Physicians and Surgeons, New York, NY

1991 – 1993 Fellowship, Anesthesiology, Columbia College of Physicians and Surgeons, New York, NY

5) Board Qualification:

Diplomate, American Board of Anesthesiology, October 1991.
Testamur, Examination of Special Competence in Perioperative Transesophageal Echocardiography (PTEeXAM), 2001.

6) Military Service: None

7) Professional Organizations:

American Society of Anesthesiologists
International Anesthesia Research Society
Society of Cardiovascular Anesthesiology

8) Academic Appointments:

1993 – 2002	Assistant Professor of Anesthesiology, Columbia University, New York, NY
2002 - present	Assistant Professor of Clinical Anesthesiology, Columbia University, New York, NY

9) Hospital/Clinical Appointments:

1993 – present Assistant Attending Anesthesiologist, Presbyterian Hospital, New York, NY.

10) Honors:

Magna cum laude, Harvard University
Alpha Omega Alpha, University of North Carolina at Chapel Hill
First Prize, New York State Society of Anesthesiologists Resident Presentations, 1991

11) Fellowship and Grant Support:

Foundation for Anesthesia Education and Research, Research Starter Grant Award, Principal Investigator, funding 7/92 - 7/93, $15,000.

Foundation for Anesthesia Education and Research Young Investigator Award, Principal Investigator, funding 7/93 - 7/96, $70,000.

NIH KO8 "Inducible knockout of the NK1 receptor"
Principal Investigator, KO8 funding 12/98 - 11/02,
$431,947 over three years
(no-cost extension to continue through 11/30/2002)

NIH RO1 "Tachykinin regulation of anxiety and stress responses"
Principal Investigator, funding 9/1/2002 – 8/30/2007
$1,287,000 over 5 years

12) Departmental and University Committees:

Research Allocation Panel (1996 – 2001)
Institutional Review Board (Alternate Boards 1-2, full member Board 3) (2003 - present)

13) Teaching:

Lecturer and clinical teacher: Anesthesiology Residency Program, Columbia University and Presbyterian Hospital, New York, NY

Advanced Cardiac Life Support Training

Anesthetic considerations of LVAD implantation. Recurrent lecture at Columbia University LVAD implantation course.

Invited Lecturer:

NK1 receptor functions in pain and neural development, Cornell University December 1994

Anxiety, stress, and the NK1 receptor, University of Chicago, Department of Anesthesia and Critical Care, July 2000

Anesthetic Considerations of LVAD Implantation, University of Chicago, Department of Anesthesia and Critical Care, July 2000

NK1 receptor function in stress and anxiety, St. John's University Department of Medicinal Chemistry, March 2002

Making a brave mouse (and making a mouse brave), Mt.Sinai School of Medicine, May 2002

Problems with anesthesia during lethal injection procedures, Geneva, Switzerland. Duke University School of Law Conference, "International Law, Human Rights, and the Death Penalty: Towards an International Understanding of the Fundamental Principles of Just Punishment", July 2002.

NK1 receptor function in stress and anxiety, Visiting Professor, NYU School of Medicine, New York, New York. October 2002.

Anesthetic Depth, Paralysis, and other medical problems with lethal injection protocols: evidence and concerns, Federal Capital Habeas Unit Annual Conference, Jacksonville, Florida. May 2004.

Medical Scrutiny of Lethal Injection Procedures. National Association for the Advancement of Colored People Capital Defender Conference, Airlie Conference Center, Warrenton, Virginia. July 2004.

Anesthetic considerations of LVAD implantation. Recurrent lecture at Columbia University LVAD implantation course.

14) Grant Review Committees: None

15) Publications:

Original peer reviewed articles

* Santarelli, L., Gobbi, G., Debs, P.C., Sibille, E. L., Blier, P., Hen, R., Heath, M.J.S. (2001). Genetic and pharmacological disruption of neurokinin 1 receptor function decreases anxiety-related behaviors and increases serotonergic function. Proc. Nat. Acad. Sci., 98(4), 1912 - 1917.

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- Heath, M. J. S., Dickstein, M. L. (2000). Perioperative management of the left ventricular assist device recipient. Prog Cardiovasc Dis.;43(1):47-54.
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- Heath, M. J. S. and Han, R. (1996). Genetic insights into serotonin function. Current Biology 6.9, 997 -999.
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Attachment B

2000 Report of the AVMA Panel on Euthanasia

2000
Report of the
AVMA Panel on Euthanasia

Members of the AVMA Panel

Bonnie V. Beaver, DVM, MS, DACVB, (Chair) Department of Small Animal Medicine and Surgery, College of Veterinary Medicine, Texas A&M University, 4474 TAMU, College Station, TX 77843-4474, representing the AVMA Executive Board.

Willie Reed, DVM, PhD, DACVP, DACPV, Animal Health Diagnostic Laboratory, College of Veterinary Medicine, Michigan State University, 8648 W. Fee Hall-AHDL, East Lansing, MI 48824-1316, representing the AVMA Council on Research.

Steven Leary, DVM, DACLAM, Division of Comparative Medicine, Washington University, Box 8061, St. Louis, MO 63110, representing the AVMA Animal Welfare Committee.

Brandon McKiernan, DVM, DACVIM, Denver Veterinary Specialists, 3885 Kipling St, Wheat Ridge, CO 80033, representing the American Animal Hospital Association.

Fairfield Bain, DVM, DACVIM, DACVR DACVECC, Hagyard-Davidson-McGee Associates PSC, 4250 Iron Works Pike, Lexington, KY 40511-8412, representing the American Association of Equine Practitioners.

Roy Schultz, DVM, MS, DABVP, 1114 N Front Ave, Ames, IA 51521, representing the American Board of Veterinary Practitioners.

B. Taylor Bennett, DVM, PhD, DACLAM, Biologic Resources Laboratory (MC533), University of Illinois at Chicago, 1840 W Taylor St, Chicago, IL 60612-7348, representing the American College of Laboratory Animal Medicine.

Peter Pascoe, BVSc, DVA, DACVA, DECVA, Department of Surgical and Radiological Sciences, School of Veterinary Medicine, University of California, Davis, CA 95616-8745, representing the American College of Veterinary Anesthesiologists.

Elizabeth Shull, DVM, DACVB, DACVIM (Neurology), Veterinary Specialty Consultation Services, 1508 Bob Kirby Rd, Knoxville, TN 37931, representing the American College of Veterinary Behaviorists.

Linda C. Cork, DVM, PhD, DACVP, Department of Comparative Medicine, School of Medicine, Stanford University, MSOB Building, Room X347, Stanford, CA 94305-5415, representing the American College of Veterinary Pathologists.

Ruth Francis-Floyd, DVM, MS, DACZM, Department of Large Animal Clinical Sciences, College of Veterinary Medicine, University of Florida, Box 100136, Gainesville, FL 32610-0136, representing the International Association of Aquatic Animal Medicine.

Keith D. Amass, DVM, Safe-Capture International Inc, PO Box 208, Mount Horeb, WI 53572, representing wildlife regulatory/conservation agencies.

Richard Johnson, PhD, Department of Physiological Sciences, College of Veterinary Medicine, University of Florida, Box 100144, Gainesville, FL 32610-0144, representing the Society for Neuroscience.

Robert H. Schmidt, MS, PhD, Department of Fisheries and Wildlife, Utah State University, Logan UT 84322-5210, representing the wildlife damage management profession.

Wendy Underwood, DVM, MS, DACVIM, Lilly Corporate Center, Eli Lilly and Co, Indianapolis, IN 46285, representing the National Institute for Animal Agriculture Euthanasia Task Force.

Gus W. Thornton, DVM, DACVIM, Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA), American Humane Education Society (AHES), 350 S Huntington Ave, Boston, MA 02130, representing an animal protection agency.

Barbara Kohn, DVM, USDA/APHIS/Animal Care, 4700 River Road, Unit 84, Riverdale, MD 20737-1234, representing the USDA/APHIS.

PREFACE

At the request of the AVMA Council on Research, the Executive Board of the AVMA convened a Panel on Euthanasia in 1999 to review and make necessary revisions to the fifth Panel Report, published in 1993.[1] In this newest version of the report, the panel has updated information on euthanasia of animals in research and animal care and control facilities; expanded information on exothermic, aquatic, and fur-bearing animals; added information on horses and wildlife; and deleted methods or agents considered unacceptable. Because the panel's deliberations were based on currently available scientific information, some euthanasia methods and agents are not discussed.

Welfare issues are increasingly being identified in the management of free-ranging wildlife, and the need for humane euthanasia guidelines in this context is great. Collection of animals for scientific investigations, euthanasia of injured or diseased wildlife species, removal of animals causing damage to property or threatening human safety, and euthanasia of animals in excess population are drawing more public attention. These issues are acknowledged in this report and special considerations are described for handling animals under free-ranging conditions, where their needs are far different from those of their domestic counterparts.

This report is intended for use by members of the

veterinary profession who carry out or oversee the euthanasia of animals. Although the report may be interpreted and understood by a broad segment of the general population, a veterinarian should be consulted in the application of these recommendations. The practice of veterinary medicine is complex and involves diverse animal species. Whenever possible, a veterinarian experienced with the species in question should be consulted when selecting the method of euthanasia, particularly when little species-specific euthanasia research has been done. Although interpretation and use of this report cannot be limited, the panel's overriding commitment is to give veterinarians guidance in relieving pain and suffering of animals that are to be euthanatized. The recommendations in this report are intended to serve as guidelines for veterinarians who must then use professional judgment in applying them to the various settings where animals are to be euthanatized.

INTRODUCTION

The term euthanasia is derived from the Greek terms *eu* meaning good and *thanatos* meaning death.[1] A "good death" would be one that occurs with minimal pain and distress. In the context of this report, euthanasia is the act of inducing humane death in an animal. It is our responsibility as veterinarians and human beings to ensure that if an animal's life is to be taken, it is done with the highest degree of respect, and with an emphasis on making the death as painless and distress free as possible. Euthanasia techniques should result in rapid loss of consciousness followed by cardiac or respiratory arrest and the ultimate loss of brain function. In addition, the technique should minimize distress and anxiety experienced by the animal prior to loss of consciousness. The panel recognized that the absence of pain and distress cannot always be achieved. This report attempts to balance the ideal of minimal pain and distress with the reality of the many environments in which euthanasia is performed. A veterinarian with appropriate training and expertise for the species involved should be consulted to ensure that proper procedures are used.

Criteria for painless death can be established only after the mechanisms of pain are understood. Pain is that sensation (perception) that results from nerve impulses reaching the cerebral cortex via ascending neural pathways. Under normal circumstances, these pathways are relatively specific, but the nervous system is sufficiently plastic that activation of nociceptive pathways does not always result in pain and stimulation of other (non-nociceptive) peripheral and central neurons can give rise to pain. The term nociceptive is derived from the word *noci* meaning to injure and *ceptive* meaning to receive, and is used to describe neuronal input caused by noxious stimuli, which threaten to, or actually do, destroy tissue. These noxious stimuli initiate nerve impulses by acting at primary nociceptors and other sensory nerve endings that respond to noxious and non-noxious stimuli from mechanical, thermal, or chemical activity. Endogenous chemical substances such as hydrogen ions, potassium ions, ATP, serotonin, histamine, bradykinin, and prostaglandins, as well as electrical currents, are capable of generating nerve impulses in nociceptor nerve fibers. Activity in nociceptive pathways can also be triggered in normally silent receptors that become sensitized by chronic pain conditions.[2]

Nerve impulse activity generated by nociceptors is conducted via nociceptor primary afferent fibers to the spinal cord or the brainstem where it is transmitted to two general sets of neural networks. One set is related to nociceptive reflexes (eg, withdrawal and flexion reflexes) that are mediated at the spinal level, and the second set consists of ascending pathways to the reticular formation, hypothalamus, thalamus, and cerebral cortex (somatosensory cortex and limbic system) for sensory processing. It is important to understand that ascending nociceptive pathways are numerous, often redundant, and are capable of considerable plasticity under chronic conditions (pathology or injury). Moreover, even the transmission of nociceptive neural activity in a given pathway is highly variable. Under certain conditions, both the nociceptive reflexes and the ascending pathways may be suppressed, as, for example, in epidural anesthesia. Under another set of conditions, nociceptive reflex actions may occur, but activity in the ascending pathways is suppressed; thus, noxious stimuli are not perceived as pain. It is incorrect to use the term pain for stimuli, receptors, reflexes, or pathways because the term implies perception, whereas all the above may be active without consequential pain perception.[2]

Pain is divided into two broad categories: (1) sensory-discriminative, which indicates the site of origin and the stimulus giving rise to the pain; and (2) motivational-affective in which the severity of the stimulus is perceived and the animal's response is determined. Sensory-discriminative processing of nociceptive impulses is most likely to be accomplished by subcortical and cortical mechanisms similar to those used for processing other sensory-discriminative input that provides the individual with information about the intensity, duration, location, and quality of the stimulus. Motivational-affective processing involves the ascending reticular formation for behavioral and cortical arousal. It also involves thalamic input to the forebrain and the limbic system for perceptions such as discomfort, fear, anxiety, and depression. The motivational-affective neural networks also have strong inputs to the limbic system, hypothalamus and the autonomic nervous system for reflex activation of the cardiovascular, pulmonary, and pituitary-adrenal systems. Responses activated by these systems feed back to the forebrain and enhance perceptions derived via motivational-affective inputs. On the basis of neurosurgical experience in humans, it is possible to separate the sensory-discriminative components from the motivational-affective components of pain.[3]

For pain to be experienced, the cerebral cortex and subcortical structures must be functional. If the cerebral cortex is nonfunctional because of hypoxia, depression by drugs, electric shock, or concussion, pain is not experienced. Therefore, the choice of the euthanasia agent or method is less critical if it is to be used on an animal that is anesthetized or unconscious, provided that the animal does not regain consciousness prior to death.

An understanding of the continuum that represents stress and distress is essential for evaluating techniques that minimize any distress experienced by an animal being euthanatized. Stress has been defined as the effect of physical, physiologic, or emotional factors (stressors) that induce an alteration in an animal's homeostasis or adaptive state.[1] The response of an animal to stress represents the adaptive process that is necessary to restore the baseline mental and physiologic state. These responses may involve changes in an animal's neuroendocrinologic system, autonomic nervous system, and mental status that may result in overt behavioral changes. An animal's response varies according to its experience, age, species, breed, and current physiologic and psychologic state.[1]

Stress and the resulting responses have been divided into three phases.[10] Eustress results when harmless stimuli initiate adaptive responses that are beneficial to the animal. Neutral stress results when the animal's response to stimuli causes neither harmful nor beneficial effects to the animal. Distress results when an animal's response to stimuli interferes with its well-being and comfort.[11]

As with many other procedures involving animals, some methods of euthanasia require physical handling of the animal. The amount of control and kind of restraint required will be determined by the animal's species, breed, size, state of domestication, degree of taming, presence of painful injury or disease, degree of excitement, and method of euthanasia. Proper handling is vital to minimize pain and distress in animals, to ensure safety of the person performing euthanasia, and, often, to protect other people and animals.

An in-depth discussion of euthanasia procedures is beyond the scope of this report; however, personnel who perform euthanasia must have appropriate certification and training, experience with the techniques to be used, and experience in the humane restraint of the species of animal to be euthanatized, to ensure that animal pain and distress are minimized during euthanasia. Training and experience should include familiarity with the normal behavior of the species being euthanatized, an appreciation of how handling and restraint affect that behavior, and an understanding of the mechanism by which the selected technique induces loss of consciousness and death. Prior to being assigned full responsibility for performing euthanasia, all personnel must have demonstrated proficiency in the use of the technique in a closely supervised environment. References provided at the end of this document may be useful for training personnel.[12-15]

Selection of the most appropriate method of euthanasia in any given situation depends on the species of animal involved, available means of animal restraint, skill of personnel, number of animals, and other considerations. Available information focuses primarily on domestic animals, but the same general considerations should be applied to all species.

This report includes four appendices that summarize information from the text. Appendix 1 lists acceptable and conditionally acceptable methods of euthanasia, categorized by species. Appendices 2 and 3 provide summaries of characteristics for acceptable and conditionally acceptable methods of euthanasia. Appendix 4 provides a summary of some unacceptable euthanasia agents and methods. Criteria used for acceptable, conditionally acceptable, and unacceptable methods are as follows: acceptable methods are those that consistently produce a humane death when used as the sole means of euthanasia; conditionally acceptable methods are those techniques that by the nature of the technique or because of greater potential for operator error or safety hazards might not consistently produce humane death or are methods not well documented in the scientific literature; and unacceptable techniques are those methods deemed inhumane under any conditions or that the panel found posed a substantial risk to the human applying the technique. The report also includes discussion of several adjunctive methods, which are those methods that cannot be used as the sole method of euthanasia, but that can be used in conjunction with other methods to produce a humane death.

GENERAL CONSIDERATIONS

In evaluating methods of euthanasia, the panel used the following criteria: (1) ability to induce loss of consciousness and death without causing pain, distress, anxiety, or apprehension; (2) time required to induce loss of consciousness; (3) reliability; (4) safety of personnel; (5) irreversibility; (6) compatibility with requirement and purpose; (7) emotional effect on observers or operators; (8) compatibility with subsequent evaluation, examination, or use of tissue; (9) drug availability and human abuse potential; (10) compatibility with species, age, and health status; (11) ability to maintain equipment in proper working order; and (12) safety for predators/scavengers should the carcass be consumed.

The panel discussed the definition of euthanasia used in this report as it applies to circumstances when the degree of control over the animal makes it difficult to ensure death without pain and distress. Slaughter of animals for food, fur, or fiber may represent such situations. However, the same standards for euthanasia should be applied to the killing of animals for food, fur, or fiber, and wildlife or feral animals. Animals intended for food should be slaughtered humanely, taking into account any special requirements of the US Department of Agriculture.[16] Painless death can be achieved by properly stunning the animal, followed immediately by exsanguination. Handling of animals prior to slaughter should be as stress free as possible. Electric prods or other devices should not be used to encourage movement of animals and are not needed if chutes and ramps are properly designed to enable animals to be moved and restrained without undue stress.[17-19] Animals must not be restrained in a painful position before slaughter.

Ethical considerations that must be addressed when euthanatizing healthy and unwanted animals reflect professional and societal concerns.[20-23] These issues are complex and warrant thorough consideration by the profession and all those concerned with the welfare of animals. Whereas the panel recognizes the need for those responsible for the euthanasia of ani-

mals to be cognizant of these issues, it does not believe that this report is the appropriate forum for an in-depth discussion of this topic.

It is the intent of the panel that euthanasia be performed in accordance with applicable federal, state, and local laws governing drug acquisition and storage, occupational safety, and methods used for euthanasia and disposal of animals. However, space does not permit a review of current federal, state, and local regulations.

The panel is aware that circumstances may arise that are not clearly covered by this report. Whenever such situations arise, a veterinarian experienced with the species should use professional judgment and knowledge of clinically acceptable techniques in selecting an appropriate euthanasia technique. Professional judgment in these circumstances will take into consideration the animal's size and its species-specific physiologic and behavioral characteristics. In all circumstances, the euthanasia method should be selected and used with the highest ethical standards and social conscience.

It is imperative that death be verified after euthanasia and before disposal of the animal. An animal in deep narcosis following administration of an injectable or inhalant agent may appear dead, but might eventually recover. Death must be confirmed by examining the animal for cessation of vital signs, and consideration given to the animal species and method of euthanasia when determining the criteria for confirming death.

ANIMAL BEHAVIORAL CONSIDERATIONS

The need to minimize animal distress, including fear, anxiety, and apprehension, must be considered in determining the method of euthanasia. Gentle restraint (preferably in a familiar and safe environment), careful handling, and talking during euthanasia often have a calming effect on animals that are used to being handled. Sedation and/or anesthesia may assist in achieving the best conditions for euthanasia. It must be recognized that any sedatives or anesthetics given at this stage that change circulation may delay the onset of the euthanasia agent. Preparation of observers should also be taken into consideration.

Animals that are wild, feral, injured, or already distressed from disease pose another challenge. Methods of pre-euthanasia handling suitable for domestic animals may not be effective for them. Because handling may stress animals unaccustomed to human contact (eg, wildlife, zoo, and feral species), the degree of restraint required to perform any euthanasia procedure should be considered when evaluating various methods. When handling these animals, calming may be accomplished by minimizing visual, auditory, and tactile stimulation. When struggling during capture or restraint may cause pain, injury, or anxiety to the animal or danger to the operator, the use of tranquilizers, analgesics, and/or anesthetics may be necessary. A route of injection should be chosen that causes the least distress in the animal for which euthanasia must be performed. Various techniques for oral delivery of sedatives to dogs and cats have been described that may be useful under these circumstances.[32,33]

Facial expressions and body postures that indicate various emotional states of animals have been described for some species.[34-37] Behavioral and physiologic responses to noxious stimuli include distress vocalization, struggling, attempts to escape, defensive or redirected aggression, salivation, urination, defecation, evacuation of anal sacs, pupillary dilatation, tachycardia, sweating, and reflex skeletal muscle contractions causing shivering, tremors, or other muscular spasms. Unconscious as well as conscious animals are capable of some of these responses. Fear can cause immobility or 'playing dead' in certain species, particularly rabbits and chickens. This immobility response should not be interpreted as loss of consciousness when the animal is, in fact, conscious. Distress vocalizations, fearful behavior, and release of certain odors or pheromones by a frightened animal may cause anxiety and apprehension in other animals. Therefore, for sensitive species, it is desirable that other animals not be present when individual animal euthanasia is performed.

HUMAN BEHAVIORAL CONSIDERATIONS

When animals must be euthanized, either as individuals or in larger groups, moral and ethical concerns dictate that humane practices be observed. Human psychologic responses to euthanasia of animals need to be considered, with grief at the loss of a life as the most common reaction.[38] There are six circumstances under which we are most aware of the effects of animal euthanasia on people.

The first of these is the veterinary clinical setting where owners have to make decisions about whether and when to euthanize. Although many owners rely heavily on their veterinarian's judgment, others may have misgivings about making their own decision. This is particularly likely if an owner feels responsible for allowing an animal's medical or behavioral problem to go unattended so that euthanasia becomes necessary. When owners choose to be present during euthanasia, they should be prepared for what will happen. What drugs are being used and how the animal could respond should be discussed. Behaviors such as vocalization, muscle twitches, failure of the eyelids to close, urination, or defecation can be distressing. Counseling services for grieving owners are now available in some communities[39] and telephone counseling is available through some veterinary schools.[40,41] Owners are not the only people affected by euthanasia of animals. Veterinarians and their staffs may also become attached to patients they have known and treated for many years and may continue to struggle with the ethical implications of ending an animal's life.

The second is animal care and control facilities where unwanted, homeless, diseased, and injured animals must be euthanized in large numbers. Distress may develop among personnel directly involved in performing euthanasia repeatedly. Emotional uneasiness, discomfort, or distress experienced by people involved with euthanasia of animals may be minimized. The person performing euthanasia must be technically proficient, use humane handling methods, understand the reasons for euthanasia, and be familiar with the

method of euthanasia being employed (ie, what is going to happen to the animal). When the person is not knowledgeable about what to expect, he or she may mistakenly interpret any movement of animals as consciousness and a lack of movement as loss of consciousness. Methods that preclude movement of animals are more aesthetically acceptable to most technical staff even though lack of movement is not an adequate criterion for evaluating euthanasia techniques. Constant exposure to, or participation in, euthanasia procedures can cause a psychologic state characterized by a strong sense of work dissatisfaction or alienation, which may be expressed by absenteeism, belligerence, or careless and callous handling of animals.[47] This is one of the principal reasons for turnover of employees directly involved with repeated animal euthanasia. Management should be aware of potential personnel problems related to animal euthanasia and determine whether it is necessary to institute a program to prevent, decrease, or eliminate this problem. Specific coping strategies can make the task more tolerable. Some strategies include adequate training programs so that euthanasia is performed competently, peer support in the workplace, professional support as necessary, focusing on animals that are successfully adopted or returned to owners, devoting some work time to educational activities, and providing time off when workers feel stressed.

The third setting is the laboratory. Researchers, technicians, and students may become attached to animals that must be euthanatized.[48] The same considerations afforded pet owners or shelter employees should be provided to those working in laboratories.

The fourth situation is wildlife control. Wildlife biologists, wildlife managers, and wildlife health professionals are often responsible for euthanatizing animals that are injured, diseased, in excessive number, or that threaten property or human safety. Although relocation of some animals is appropriate and attempted, relocation is often only a temporary solution to a larger problem. People who must deal with these animals, especially under public pressure to save the animals rather than destroy them, can experience extreme distress and anxiety.

The fifth setting is livestock and poultry slaughter facilities. The large number of animals processed daily can take a heavy toll on employees physically and emotionally. Federal and state agricultural employees may also be involved in mass euthanasia of poultry and livestock in the face of disease outbreaks, bioterrorism, and natural disasters.

The last situation is public exposure. Because euthanasia of zoo animals, animals involved in roadside or racetrack accidents, stranded marine animals, nuisance or injured wildlife, and others can draw public attention, human attitudes and responses should be considered whenever animals are euthanatized. Natural disasters and foreign animal disease programs also present public challenges. These considerations, however, should not outweigh the primary responsibility of using the most rapid and painless euthanasia method possible under the circumstances.

MODES OF ACTION OF EUTHANATIZING AGENTS

Euthanatizing agents cause death by three basic mechanisms: (1) hypoxia, direct or indirect; (2) direct depression of neurons necessary for life function; and (3) physical disruption of brain activity and destruction of neurons necessary for life.

Agents that induce death by direct or indirect hypoxia can act at various sites and can cause loss of consciousness at different rates. For death to be painless and distress-free, loss of consciousness should precede loss of motor activity (muscle movement). Loss of motor activity, however, cannot be equated with loss of consciousness and absence of distress. Thus, agents that induce muscle paralysis without loss of consciousness are not acceptable as sole agents for euthanasia (eg, depolarizing and nondepolarizing muscle relaxants, strychnine, nicotine, and magnesium salts). With other techniques that induce hypoxia, some animals may have motor activity following loss of consciousness, but this is reflex activity and is not perceived by the animal.

A second group of euthanatizing agents depress nerve cells of the brain, inducing loss of consciousness followed by death. Some of these agents release inhibition of motor activity during the first stage of anesthesia, resulting in a so-called excitement or delirium phase, during which there may be vocalization and some muscle contraction. These responses do not appear to be purposeful. Death follows loss of consciousness, and is attributable to cardiac arrest and/or hypotension following direct depression of respiratory centers.

Physical disruption of brain activity caused by concussion, direct destruction of the brain, or electrical depolarization of neurons, induces rapid loss of consciousness. Death occurs because of destruction of midbrain centers controlling cardiac and respiratory activity or as a result of adjunctive methods (eg, exsanguination) used to kill the animal. Exaggerated muscular activity can follow loss of consciousness and, although this may disturb some observers, the animal is not experiencing pain or distress.

INHALANT AGENTS

Any gas that is inhaled must reach a certain concentration in the alveoli before it can be effective; therefore, euthanasia with any of these agents takes some time. The suitability of a particular agent depends on whether an animal experiences distress between the time it begins to inhale the agent and the time it loses consciousness. Some agents may induce convulsions, but these generally follow loss of consciousness. Agents inducing convulsions prior to loss of consciousness are unacceptable for euthanasia.

Certain considerations are common to all inhalant agents. (1) In most cases, onset of loss of consciousness is more rapid, and euthanasia more humane, if the animal is rapidly exposed to a high concentration of the agent. (2) The equipment used to deliver and maintain this high concentration must be in good working order and in compliance with state and federal regulations. Leaky or faulty equipment may lead to

slow distressful death and be hazardous to other animals and to personnel. (3) Most of these agents are hazardous to personnel because of the risk of explosions (eg, ether), narcosis (eg, halothane), hypoxemia (eg, nitrogen and carbon monoxide), addiction (eg, nitrous oxide), or health effects resulting from chronic exposure (eg, nitrous oxide and carbon monoxide). (4) Alveolar concentrations rise slowly in an animal with decreased ventilation, making agitation more likely during induction. Other nonlinhalant methods of euthanasia should be considered for such animals. (5) Neonatal animals appear to be resistant to hypoxia, and because all inhalant agents ultimately cause hypoxia, neonatal animals take longer to die than adults. Glass et al,[4] reported that newborn dogs, rabbits, and guinea pigs survived a nitrogen atmosphere much longer than did adults. Dogs, at 1 week old, survived for 14 minutes compared with a 3-minute survival time after a few weeks of age. Guinea pigs survived for 4.5 minutes at 1 day old, compared with 3 minutes at 8 days or older. Rabbits survived for 13 minutes at 6 days old, 4 minutes at 14 days, and 1.5 minutes at 19 days and older. The panel recommends that inhalant agents not be used alone in animals less than 16 weeks old except to induce loss of consciousness, followed by the use of some other method to kill the animal. (6) Rapid gas flows can produce a noise that frightens animals. If high flows are required, the equipment should be designed to minimize noise. (7) Animals placed together in chambers should be of the same species, and, if needed, should be restrained so that they will not hurt themselves or others. Chambers should not be overloaded and need to be kept clean to minimize odors that might distress animals subsequently euthanized. (8) Reptiles, amphibians, and diving birds and mammals have a great capacity for holding their breath and anaerobic metabolism. Therefore, induction of anesthesia and time to loss of consciousness when using inhalants may be greatly prolonged. Other techniques may be more appropriate for these species.

Inhalant anesthetics

Inhalant anesthetics (eg, ether, halothane, methoxyflurane, isoflurane, sevoflurane, desflurane, and enflurane) have been used to euthanize many species.[4] Halothane induces anesthesia rapidly and is the most effective inhalant anesthetic for euthanasia. Enflurane is less soluble in blood than halothane, but, because of its lower vapor pressure and lower potency, induction rates may be similar to those for halothane. At deep anesthetic planes, animals may seizure. It is an effective agent for euthanasia, but the associated seizure activity may be disturbing to personnel. Isoflurane is less soluble than halothane, and it should induce anesthesia more rapidly. However, it has a slightly pungent odor and animals often hold their breath, delaying onset of loss of consciousness. Isoflurane also may require more drug to kill an animal, compared with halothane. Although isoflurane is acceptable as a euthanasia agent, halothane is preferred. Sevoflurane is less soluble than halothane and does not have an objectionable odor. It is less potent than isoflurane or halothane and has a lower vapor pressure. Anesthetic concentrations can be achieved and maintained rapidly. Desflurane is currently the least soluble potent inhalant anesthetic, but the vapor is quite pungent, which may slow induction. This drug is so volatile that it could displace oxygen (O_2) and induce hypoxemia during induction if supplemental O_2 is not provided. Methoxyflurane is highly soluble, and slow anesthetic induction with its use may be accompanied by agitation. It is a conditionally acceptable agent for euthanasia in rodents.[4] Ether has high solubility in blood and induces anesthesia slowly. It is irritating to the eyes and nose, poses serious risks associated with its flammability and explosiveness, and has been used to create a model for stress.[4-6]

With inhalant anesthetics, the animal can be placed in a closed receptacle containing cotton or gauze soaked with an appropriate amount of the anesthetic,[4] or the anesthetic can be introduced from a vaporizer. The latter method may be associated with a longer induction time. Vapors are inhaled until respiration ceases and death ensues. Because the liquid state of most inhalant anesthetics is irritating, animals should be exposed only to vapors. Also, sufficient air or O_2 must be provided during the induction period to prevent hypoxemia.[4] In the case of small rodents placed in a large container, there will be sufficient O_2 in the chamber to prevent hypoxemia. Larger species placed in small containers may need supplemental air or O_2.[4]

Nitrous oxide (N_2O) may be used with other inhalants to speed the onset of anesthesia, but alone it does not induce anesthesia in animals, even at 100% concentration. When used by itself, N_2O produces hypoxemia before respiratory or cardiac arrest. As a result, animals may become distressed prior to loss of consciousness.

Occupational exposure to inhalant anesthetics constitutes a human health hazard. Spontaneous abortion and congenital abnormalities have been associated with exposure of women to trace amounts of inhalation anesthetic agents during early stages of pregnancy.[7] Regarding human exposure to inhalant anesthetics, the concentrations of halothane, enflurane, and isoflurane should be less than 2 ppm, and less than 25 ppm for nitrous oxide.[7] There are no controlled studies proving that such concentrations of anesthetics are safe, but these concentrations were established because they were found to be attainable under hospital conditions. Effective procedures must be used to protect personnel from anesthetic vapors.

Advantages—(1) Inhalant anesthetics are particularly valuable for euthanasia of smaller animals (< 7 kg) or for animals in which venipuncture may be difficult. (2) Halothane, enflurane, isoflurane, sevoflurane, desflurane, methoxyflurane, and N_2O are nonflammable and nonexplosive under ordinary environmental conditions.

Disadvantages—(1) Animals may struggle and become anxious during induction of anesthesia because anesthetic vapors may be irritating and can induce excitement. (2) Ether is flammable and explo-

sive. Explosions have occurred when animals, euthanized with ether, were placed in an ordinary (not explosion proof) refrigerator or freezer and when bagged animals were placed in an incinerator. (3) Induction with methoxyflurane is unacceptably slow in some species. (4) Nitrous oxide will support combustion. (5) Personnel and animals can be injured by exposure to these agents. (6) There is a potential for human abuse of some of these drugs, especially N_2O.

Recommendations—In order of preference, halothane, enflurane, isoflurane, sevoflurane, methoxyflurane, and desflurane, with or without nitrous oxide, are acceptable for euthanasia of small animals (< 7 kg). Ether should only be used in carefully controlled situations in compliance with state and federal occupational health and safety regulations. It is conditionally acceptable. Nitrous oxide should not be used alone, pending further scientific studies on its suitability for animal euthanasia. Although acceptable, these agents are generally not used in larger animals because of their cost and difficulty of administration.

Carbon dioxide

Room air contains 0.04% carbon dioxide (CO_2), which is heavier than air and nearly odorless. Inhalation of CO_2 at a concentration of 7.5% increases the pain threshold, and higher concentrations of CO_2 have a rapid anesthetic effect.[85,86]

Leake and Waters[87] reported the experimental use of CO_2 as an anesthetic agent for dogs. At concentrations of 30% to 40% CO_2 in O_2, anesthesia was induced within 1 to 2 minutes, usually without struggling, retching, or vomiting. For cats, inhalation of 60% CO_2 results in loss of consciousness within 45 seconds, and respiratory arrest within 5 minutes.[88] Signs of effective CO_2 anesthesia are those associated with deep surgical anesthesia, such as loss of withdrawal and palpebral reflexes.[89] Time to loss of consciousness is decreased by use of higher concentrations of CO_2 with an 80 to 100% concentration providing anesthesia in 12 to 33 seconds in rats and 70% CO_2 in O_2 inducing anesthesia in 40 to 50 seconds.[5,88] Time to loss of consciousness will be longer if the concentration is increased slowly rather than immersing the animal in the full concentration immediately.

Several investigators have suggested that inhalation of high concentrations of CO_2 may be distressing to animals,[85,90] because the gas dissolves in moisture on the nasal mucosa. The resulting product, carbonic acid, may stimulate nociceptors in the nasal mucosa. Some humans exposed to concentrations of around 50% CO_2 report that inhaling the gas is unpleasant and that higher concentrations are noxious.[91,92] A brief study of swine examined the aversive nature of CO_2 exposure[93] and found that 90% CO_2 was aversive to pigs while 30% was not. For rats, exposure to increasing concentrations of CO_2 (33% achieved after 1 minute) in their home cage produced no evident stress as measured by behavior and ACTH, glucose, and corticosterone concentrations in serum.[94]

Carbon dioxide has been used to euthanatize groups of small laboratory animals, including mice, rats, guinea pigs, chickens, and rabbits,[5,71,95] and to render swine unconscious before humane slaughter.[85,92,96] The combination of 40% CO_2 and approximately 3% CO has been used experimentally for euthanasia of dogs.[97] Carbon dioxide has been used in specially designed chambers to euthanatize individual cats[71,98] and other small laboratory animals.[85,99,100]

Studies of 1-day-old chickens have revealed that CO_2 is an effective euthanatizing agent. Inhalation of CO_2 caused little distress to the birds, suppressed nervous activity, and induced death within 5 minutes.[71] Because respiration begins during embryonic development, the unhatched chicken's environment may normally have a CO_2 concentration as high as 14%. Thus, CO_2 concentrations for euthanasia of newly hatched chickens and neonates of other species should be especially high. A CO_2 concentration of 60% to 70% with a 5-minute exposure time appears to be optimal.[71]

In studies of mink, high concentrations of CO_2 would kill them quickly, but a 70% CO_2 concentration induced loss of consciousness without killing them.[89] Some burrowing animals, such as rabbits of the species Oryctolagus, also have prolonged survival times when exposed to CO_2.[85] Some burrowing and diving animals have physiologic mechanisms for coping with hypercapnia. Therefore, it is necessary to have a sufficient concentration of CO_2 to kill the animal by hypoxemia following induction of anesthesia with CO_2.

Advantages—(1) The rapid depressant, analgesic, and anesthetic effects of CO_2 are well established. (2) Carbon dioxide is readily available and can be purchased in compressed gas cylinders. (3) Carbon dioxide is inexpensive, nonflammable, nonexplosive, and poses minimal hazard to personnel when used with properly designed equipment. (4) Carbon dioxide does not result in accumulation of tissue residues in food-producing animals. (5) Carbon dioxide euthanasia does not distort murine cholinergic receptors[85] or corticosterone concentrations.[94]

Disadvantages—(1) Because CO_2 is heavier than air, incomplete filling of a chamber may permit animals to climb or raise their heads above the higher concentrations and avoid exposure. (2) Some species, such as fish and burrowing and diving mammals, may have extraordinary tolerance for CO_2. (3) Reptiles and amphibians may breathe too slowly for the use of CO_2. (4) Euthanasia by exposure to CO_2 may take longer than euthanasia by other means.[85] (5) Induction of loss of consciousness at lower concentrations (< 30%) may produce pulmonary and upper respiratory tract lesions.[85,101] (6) High concentrations of CO_2 may be distressful to some animals.

Recommendations—Carbon dioxide is acceptable for euthanasia in appropriate species (Tables 1 and 2). Compressed CO_2 gas in cylinders is the only recommended source of carbon dioxide because the inflow to the chamber can be regulated precisely. Carbon dioxide generated by other methods such as from dry ice, fire extinguishers, or chemical means (eg, antacids) is unacceptable. Species should be separated and cham-

bers should not be overcrowded. With an animal in the chamber, an optimal flow rate should displace at least 20% of the chamber volume per minute.[49] Loss of consciousness may be induced more rapidly by exposing animals to a CO_2 concentration of 70% or more by prefilling the chamber for species in which this has not been shown to cause distress. Gas flow should be maintained for at least 1 minute after apparent clinical death.[49] It is important to verify that an animal is dead before removing it from the chamber. If an animal is not dead, CO_2 narcosis must be followed with another method of euthanasia. Adding O_2 to the CO_2 may or may not preclude signs of distress.[49,50] Additional O_2 will, however, prolong time to death and may complicate determination of consciousness. There appears to be no advantage to combining O_2 with carbon dioxide for euthanasia.[50]

Nitrogen, argon

Nitrogen (N_2) and argon (Ar) are colorless, odorless gases that are inert, nonflammable, and nonexplosive. Nitrogen comprises 78% of atmospheric air, whereas Ar comprises less than 1%.

Euthanasia is induced by placing the animal in a closed container that has been prefilled with N_2 or Ar or into which the gas is then rapidly introduced. Nitrogen/Ar displaces O_2, thus inducing death by hypoxemia.

In studies by Herin et al,[51] dogs became unconscious within 76 seconds when a N_2 concentration of 98.5% was achieved in 45 to 60 seconds. The electroencephalogram (EEG) became isoelectric (flat) in a mean time of 80 seconds, and arterial blood pressure was undetectable at 204 seconds. Although all dogs hyperventilated prior to loss of consciousness, the investigators concluded that this method induced death without pain. Following loss of consciousness, vocalization, gasping, convulsions, and muscular tremors developed in some dogs. At the end of a 5-minute exposure period, all dogs were dead.[51] These findings were similar to those for rabbits[52] and mink.[53,54]

With N_2 flowing at a rate of 39% of chamber volume per minute, rats collapsed in approximately 3 minutes and stopped breathing in 5 to 6 minutes. Regardless of flow rate, signs of panic and distress were evident before the rats collapsed and died.[55] Insensitivity to pain under such circumstances is questionable.[56]

Tranquilization with acepromazine, in conjunction with N_2 euthanasia of dogs, was investigated by Quine et al.[57] Using ECG and EEG recordings, they found these dogs had much longer survival times than dogs not given acepromazine before administration of N_2. In one dog, ECG activity continued for 51 minutes. Quine also addressed distress associated with exposure to N_2 by removing cats and dogs from the chamber following loss of consciousness and allowing them to recover. When these animals were put back into the chamber, they did not appear afraid or apprehensive.

Investigations into the aversiveness of Ar to swine and poultry have revealed that these animals will tolerate breathing 90% Ar with 2% O_2.[58,59] Swine voluntarily entered a chamber containing this mixture, for a food reward, and only withdrew from the chamber as they became static. They reentered the chamber immediately to continue eating. Poultry also entered a chamber containing this mixture for a food reward and continued eating until they collapsed.[59] When Ar was used to euthanatize chickens, exposure to a chamber prefilled with Ar, with an O_2 concentration of < 2%, led to EEG changes and collapse in 9 to 12 seconds. Birds removed from the chamber at 15 to 17 seconds failed to respond to comb pinching. Continued exposure led to convulsions at 20 to 24 seconds. Somatosensory-evoked potentials were lost at 24 to 34 seconds, and the EEG became isoelectric at 57 to 66 seconds. Convulsion onset was after loss of consciousness (collapse and loss of response to comb pinch), so this would appear to be a humane method of euthanasia for chickens.[58] Despite the availability of some information, there is still much about the use of N_2/Ar that needs to be investigated.

Advantages—(1) Nitrogen and Ar are readily available as compressed gases. (2) Hazards to personnel are minimal.

Disadvantages—(1) Loss of consciousness is preceded by hypoxemia and ventilatory stimulation, which may be distressing to the animal. (2) Reestablishing a low concentration of O_2 (ie, 6% or greater) in the chamber before death will allow immediate recovery.[49]

Recommendations—Nitrogen and Ar can be distressful to some species (eg, rats).[55] Therefore, this technique is conditionally acceptable only if O_2 concentrations < 2% are achieved rapidly, and animals are heavily sedated or anesthetized. With heavy sedation or anesthesia, it should be recognized that death may be delayed. Although N_2 and Ar are effective, other methods of euthanasia are preferable.

Carbon monoxide

Carbon monoxide (CO) is a colorless, odorless gas that is nonflammable and nonexplosive unless concentrations exceed 10%. It combines with hemoglobin to form carboxyhemoglobin and blocks uptake of O_2 by erythrocytes, leading to fatal hypoxemia.

In the past, mass euthanasia has been accomplished by use of 3 methods for generating CO: (1) chemical interaction of sodium formate and sulfuric acid, (2) exhaust fumes from idling gasoline internal combustion engines, and (3) commercially compressed CO in cylinders. The first 2 techniques are associated with problems such as production of other gases, achieving inadequate concentrations of carbon monoxide, inadequate cooling of the gas, and maintenance of equipment. Therefore, the only acceptable source is compressed CO in cylinders.

In a study by Ramsey and Ellmann,[60] 8% CO caused guinea pigs to collapse in 40 seconds to 2 minutes, and death occurred within 6 minutes. Carbon monoxide has been used to euthanatize mink[61,62] and chinchillas. These animals collapsed in 1 minute, breathing ceased in 2 minutes, and the heart stopped beating in 5 to 7 minutes.

In a study evaluating the physiologic and behavioral characteristics of dogs exposed to 6% CO in air, Chalifoux and Dallaire[6] could not determine the precise time of loss of consciousness. Electroencephalographic recordings revealed 20 to 25 seconds of abnormal cortical function prior to loss of consciousness. It was during this period that the dogs became agitated and vocalized. It is not known whether animals experience distress; however, humans in this phase reportedly are not distressed.[6] Subsequent studies have revealed that tranquilization with acepromazine significantly decreases behavioral and physiologic responses of dogs euthanatized with CO.[8]

In a comparative study, CO from gasoline engine exhaust and 70% CO_2 plus 30% O_2 were used to euthanatize cats. Euthanasia was divided into 3 phases. Phase I was the time from initial contact to onset of clinical signs (eg, yowling, staggering, or trembling). Phase II extended from the end of phase I until recumbency, and phase III from the end of phase II until death.[9] The study revealed that signs of agitation before loss of consciousness were greatest with CO_2 plus O_2. Convulsions occurred during phases II and III with both methods. However, when the euthanasia chamber was prefilled with CO (ie, exhaust fumes), convulsions did not occur in phase III. Time to complete immobilization was greater with CO_2 plus O_2 (approximately 90 seconds) than with CO alone (approximately 56 seconds).[9] In neonatal pigs, excitation was more likely to precede loss of consciousness if the pigs were exposed to a rapid rise in CO concentration. This agitation was reduced at lower flow rates, or when CO was combined with nitrogen.[10]

In people, the most common symptoms of early CO toxicosis are headache, dizziness, and weakness. As concentrations of carboxyhemoglobin increase, these signs may be followed by decreased visual acuity, tinnitus, nausea, progressive depression, confusion, and collapse.[11] Because CO stimulates motor centers in the brain, loss of consciousness may be accompanied by convulsions and muscular spasms.

Carbon monoxide is a cumulative poison.[11] Distinct signs of CO toxicosis are not evident until the CO concentration is 0.08% in air, and acute signs do not develop until the CO concentration is approximately 0.2% in air. In humans, exposure to 0.32% CO and 0.45% CO for one hour will induce loss of consciousness and death, respectively.[12] Carbon monoxide is extremely hazardous for personnel because it is highly toxic and difficult to detect. Chronic exposure to low concentrations of carbon monoxide may be a health hazard, especially with regard to cardiovascular disease and teratogenic effects.[13-15] An efficient exhaust or ventilatory system is essential to prevent accidental exposure of humans.

Advantages—(1) Carbon monoxide induces loss of consciousness without pain and with minimal discernible discomfort. (2) Hypoxemia induced by CO is insidious, so that the animal appears to be unaware. (3) Death occurs rapidly if concentrations of 4 to 6% are used.

Disadvantages—(1) Safeguards must be taken to prevent exposure of personnel. (2) Any electrical equipment exposed to CO (eg, lights and fans) must be explosion proof.

Recommendations—Carbon monoxide used for individual animal or mass euthanasia is acceptable for dogs, cats, and other small mammals, provided that commercially compressed CO is used and the following precautions are taken: (1) personnel using CO must be instructed thoroughly in its use and must understand its hazards and limitations; (2) the CO chamber must be of the highest quality construction and should allow for separation of individual animals; (3) the CO source and chamber must be located in a well-ventilated environment, preferably out of doors; (4) the chamber must be well lit and have view ports that allow personnel direct observation of animals; (5) the CO flow rate should be adequate to rapidly achieve a uniform CO concentration of at least 6% after animals are placed in the chamber, although some species (eg, neonatal pigs) are less likely to become agitated with a gradual rise in CO concentration;[10] and (6) if the chamber is inside a room, CO monitors must be placed in the room to warn personnel of hazardous concentrations. It is essential that CO use be in compliance with state and federal occupational health and safety regulations.

NONINHALANT PHARMACEUTICAL AGENTS

The use of injectable euthanasia agents is the most rapid and reliable method of performing euthanasia. It is the most desirable method when it can be performed without causing fear or distress in the animal. When the restraint necessary for giving an animal an intravenous injection would impart added distress to the animal or pose undue risk to the operator, sedation, anesthesia, or an acceptable alternate route of administration should be employed. Aggressive, fearful, wild, or feral animals should be sedated or given a nonparalytic immobilizing agent prior to intravenous administration of the euthanasia agent.

When intravenous administration is considered impractical or impossible, intraperitoneal administration of a nonirritating euthanasia agent is acceptable, provided the drug does not contain neuromuscular blocking agents. Intracardiac injection is acceptable only when performed on heavily sedated, anesthetized, or comatose animals. It is not considered acceptable in awake animals, owing to the difficulty and unpredictability of performing the injection accurately. Intramuscular, subcutaneous, intrathoracic, intrapulmonary, intrahepatic, intrarenal, intrasplenic, intratracheal, and other nonvascular injections are not acceptable methods of administering injectable euthanasia agents.

When injectable euthanasia agents are administered into the peritoneal cavity, animals may be slow to pass through stages I and II of anesthesia. Accordingly, they should be placed in small cages in a quiet area to minimize excitement and trauma.

Barbituric acid derivatives

Barbiturates depress the central nervous system in descending order, beginning with the cerebral cortex,

with loss of consciousness progressing to anesthesia. With an overdose, deep anesthesia progresses to apnea, owing to depression of the respiratory center, which is followed by cardiac arrest.

All barbituric acid derivatives used for anesthesia are acceptable for euthanasia when administered intravenously. There is a rapid onset of action, and loss of consciousness induced by barbiturates results in minimal or transient pain associated with venipuncture. Desirable barbiturates are those that are potent, long-acting, stable in solution, and inexpensive. Sodium pentobarbital best fits these criteria and is most widely used, although others such as secobarbital are also acceptable.

Advantages—(1) A primary advantage of barbiturates is speed of action. This effect depends on the dose, concentration, route, and rate of the injection. (2) Barbiturates induce euthanasia smoothly with minimal discomfort to the animal. (3) Barbiturates are less expensive than many other euthanasia agents.

Disadvantages—(1) Intravenous injection is necessary for best results and requires trained personnel. (2) Each animal must be restrained. (3) Current federal drug regulations require strict accounting for barbiturates and these must be used under the supervision of personnel registered with the US Drug Enforcement Administration (DEA). (4) An aesthetically objectionable terminal gasp may occur in unconscious animals. (5) These drugs tend to persist in the carcass and may cause sedation or even death of animals that consume the body.

Recommendations—The advantages of using barbiturates for euthanasia in small animals far outweigh the disadvantages. Intravenous injection of a barbituric acid derivative is the preferred method for euthanasia of dogs, cats, other small animals, and horses. Intraperitoneal injection may be used in situations when an intravenous injection would be distressful or even dangerous. Intracardiac injection must only be used if the animal is heavily sedated, unconscious, or anesthetized.

Pentobarbital combinations

Several euthanasia products are formulated to include a barbituric acid derivative (usually sodium pentobarbital), with added local anesthetic agents or agents that metabolize to pentobarbital. Although some of these additives are slowly cardiotoxic, this pharmacologic effect is inconsequential. These combination products are listed by the DEA as Schedule III drugs, making them somewhat simpler to obtain, store, and administer than Schedule II drugs such as sodium pentobarbital. The pharmacologic properties and recommended use of combination products that combine sodium pentobarbital with lidocaine or phenytoin are interchangeable with those of pure barbituric acid derivatives.

A combination of pentobarbital with a neuromuscular blocking agent is not an acceptable euthanasia agent.

Chloral hydrate

Chloral hydrate depresses the cerebrum slowly; therefore, restraint may be a problem for some animals. Death is caused by hypoxemia resulting from progressive depression of the respiratory center, and may be preceded by gasping, muscle spasms, and vocalization.

Recommendations—Chloral hydrate is conditionally acceptable for euthanasia of large animals only when administered intravenously and only after sedation to decrease the aforementioned undesirable side effects. Chloral hydrate is not acceptable for dogs, cats, and other small animals because the side effects may be severe, reactions can be aesthetically objectionable, and other products are better choices.

T-61

T-61 is an injectable, nonbarbiturate, non-narcotic mixture of 3 drugs used for euthanasia. These drugs provide a combination of general anesthetic, curariform, and local anesthetic actions. T-61 has been withdrawn from the market and is no longer manufactured or commercially available in the United States. It is available in Canada and other countries. T-61 should be used only intravenously and at carefully monitored rates of injection, because there is some question as to the differential absorption and onset of action of the active ingredients when administered by other routes.[1]

Tricaine methane sulfonate (MS 222, Tricaine-S)

MS 222 is commercially available as tricaine methane sulfonate (TMS), which can be used for the euthanasia of amphibians and fish. Tricaine is a benzoic acid derivative and, in water of low alkalinity (< 50 mg/L as $CaCo_3$); the solution should be buffered with sodium bicarbonate.[39] A 10 g/L stock solution can be made, and sodium bicarbonate added to saturation, resulting in a pH between 7.0 and 7.5 for the solution. The stock solution should be stored in a dark brown bottle, and refrigerated or frozen if possible. The solution should be replaced monthly and any time a brown color is observed.[39] For euthanasia, a concentration ≥ 250 mg/L is recommended and fish should be left in this solution for at least 10 minutes following cessation of opercular movement.[39] In the United States, there is a 21-day withdrawal time for MS 222; therefore, it is not appropriate for euthanasia of animals intended for food.

Potassium chloride in conjunction with prior general anesthesia

Although unacceptable and condemned when used in unanesthetized animals, the use of a supersaturated solution of potassium chloride injected intravenously or intracardially in an animal under general anesthesia is an acceptable method to produce cardiac arrest and death. The potassium ion is cardiotoxic, and rapid intravenous or intracardiac administration of 1 to 2 mmol/kg of body weight will cause cardiac arrest. This is a preferred injectable technique for euthanasia of livestock or wildlife species to reduce the risk of toxicosis for predators or scavengers in situations where carcasses of euthanatized animals may be consumed.[40,41]

Advantages—(1) Potassium chloride is not a controlled substance. It is easily acquired, transported, and mixed in the field. (2) Potassium chloride, when used with appropriate methods to render an animal unconscious, results in a carcass that is potentially less toxic for scavengers and predators in cases where carcass disposal is impossible or impractical.

Disadvantage—Rippling of muscle tissue and clonic spasms may occur on or shortly after injection.

Recommendations—It is of utmost importance that personnel performing this technique are trained and knowledgeable in anesthetic techniques, and are competent in assessing anesthetic depth appropriate for administration of potassium chloride intravenously. Administration of potassium chloride intravenously requires animals to be in a surgical plane of anesthesia, characterized by loss of consciousness, loss of reflex muscle response, and loss of response to noxious stimuli. Saturated potassium chloride solutions are effective in causing cardiac arrest following rapid intracardiac or intravenous injection. Residual tissue concentrations of general anesthetics after anesthetic induction have not been documented. Whereas no scavenger toxicoses have been reported with potassium chloride in combination with a general anesthetic, proper carcass disposal should always be attempted to prevent possible toxicosis by consumption of a carcass contaminated with general anesthetics.

Unacceptable injectable agents

When used alone, the injectable agents listed in Appendix 4 (strychnine, nicotine, caffeine, magnesium sulfate, potassium chloride, cleaning agents, solvents, disinfectants and other soaps or salts, and all neuromuscular blocking agents) are unacceptable and are absolutely condemned for use as euthanasia agents.

PHYSICAL METHODS

Physical methods of euthanasia include captive bolt, gunshot, cervical dislocation, decapitation, electrocution, microwave irradiation, kill traps, thoracic compression, exsanguination, stunning, and pithing. When properly used by skilled personnel with well-maintained equipment, physical methods of euthanasia may result in less fear and anxiety and be more rapid, painless, humane, and practical than other forms of euthanasia. Exsanguination, stunning, and pithing are not recommended as a sole means of euthanasia, but should be considered adjuncts to other agents or methods.

Some consider physical methods of euthanasia aesthetically displeasing. There are occasions, however, when what is perceived as aesthetic and what is most humane are in conflict. Physical methods may be the most appropriate method for euthanasia and rapid relief of pain and suffering in certain situations. Personnel performing physical methods of euthanasia must be well trained and monitored for each type of physical technique performed. That person must also be sensitive to the aesthetic implications of the method and inform onlookers about what they should expect when possible.

Since most physical methods involve trauma, there is inherent risk for animals and humans. Extreme care and caution should be used. Skill and experience of personnel is essential. If the method is not performed correctly, animals and personnel may be injured. Inexperienced persons should be trained by experienced persons and should practice on carcasses or anesthetized animals to be euthanized until they are proficient in performing the method properly and humanely. When done appropriately, the panel considers most physical methods conditionally acceptable for euthanasia.

Penetrating captive bolt

A penetrating captive bolt is used for euthanasia of ruminants, horses, swine, laboratory rabbits, and dogs.[48] Its mode of action is concussion and trauma to the cerebral hemisphere and brainstem.[48,116] Captive bolt guns are powered by gunpowder or compressed air and must provide sufficient energy to penetrate the skull of the species on which they are being used.[48] Adequate restraint is important to ensure proper placement of the captive bolt. A cerebral hemisphere and the brainstem must be sufficiently disrupted by the projectile to induce sudden loss of consciousness and subsequent death. Accurate placement of captive bolts for various species has been described.[48,112] A multiple projectile has been suggested as a more effective technique, especially for large cattle.[48]

A nonpenetrating captive bolt only stuns animals and should not be used as a sole means of euthanasia (see "Stunning" under "Adjunctive Methods").

Advantage—The penetrating captive bolt is an effective method of euthanasia for use in slaughterhouses, in research facilities, and on the farm when use of drugs is inappropriate.

Disadvantage—(1) It is aesthetically displeasing. (2) Death may not occur if equipment is not maintained and used properly.

Recommendations—Use of the penetrating captive bolt is an acceptable and practical method of euthanasia for horses, ruminants, and swine. It is conditionally acceptable in other appropriate species. The nonpenetrating captive bolt must not be used as a sole method of euthanasia.

Euthanasia by a blow to the head

Euthanasia by a blow to the head must be evaluated in terms of the anatomic features of the species on which it is to be performed. A blow to the head can be a humane method of euthanasia for neonatal animals with thin craniums, such as young pigs. If a single sharp blow delivered to the central skull bones with sufficient force can produce immediate depression of the central nervous system and destruction of brain tissue. When properly performed, loss of consciousness is rapid. The anatomic features of neonatal calves, however, make a blow to the head in this species unacceptable. Personnel performing euthanasia by use of a blow to the head must be properly trained and monitored for proficiency with this method of euthanasia, and they must be aware of its aesthetic implications.

Gunshot

A properly placed gunshot can cause immediate insensibility and humane death. In some circumstances, a gunshot may be the only practical method of euthanasia. Shooting should only be performed by highly skilled personnel trained in the use of firearms and only in jurisdictions that allow for legal firearm use. Personnel, public, and nearby animal safety should be considered. The procedure should be performed outdoors and away from public access.

For use of a gunshot to the head as a method of euthanasia in captive animals, the firearm should be aimed so that the projectile enters the brain, causing instant loss of consciousness.[92,103-110] This must take into account differences in brain position and skull conformation between species, as well as the energy requirement for skull bone and tissue penetration.[108,110] Accurate targeting for a gunshot to the head in various species has been described.[104,105,108] For wildlife and other freely roaming animals, the preferred target area should be the head. The appropriate firearm should be selected for the situation, with the goal being penetration and destruction of brain tissue without emergence from the contralateral side of the head.[108] A gunshot to the heart or neck does not immediately render animals unconscious and thus is not considered to meet the panel's definition of euthanasia.[92]

Advantages—(1) Loss of consciousness is instantaneous if the projectile destroys most of the brain. (2) Given the need to minimize stress induced by handling and human contact, gunshot may at times be the most practical and logical method of euthanasia of wild or free-ranging species.

Disadvantages—(1) Gunshot may be dangerous to personnel. (2) It is aesthetically unpleasant. (3) Under field conditions, it may be difficult to hit the vital target area. (4) Brain tissue may not be able to be examined for evidence of rabies infection or chronic wasting disease when the head is targeted.

Recommendations—When other methods cannot be used, an accurately delivered gunshot is a conditionally acceptable method of euthanasia.[104,105,108] When an animal can be appropriately restrained, the penetrating captive bolt is preferred to a gunshot. Prior to shooting, animals accustomed to the presence of humans should be treated in a calm and reassuring manner to minimize anxiety. In the case of wild animals, gunshots should be delivered with the least amount of prior human contact necessary. Gunshot should not be used for routine euthanasia of animals in animal control situations, such as municipal pounds or shelters.

Cervical dislocation

Cervical dislocation is a technique that has been used for many years and, when performed by well-trained individuals, appears to be humane. However, there are few scientific studies to confirm this observation. This technique is used to euthanatize poultry, other small birds, mice, and immature rats and rabbits. For mice and rats, the thumb and index finger are placed on either side of the neck at the base of the skull or, alternatively, a rod is pressed at the base of the skull. With the other hand, the base of the tail or the hind limbs are quickly pulled, causing separation of the cervical vertebrae from the skull. For immature rabbits, the head is held in one hand and the hind limbs in the other. The animal is stretched and the neck is hyperextended and dorsally twisted to separate the first cervical vertebra from the skull.[92,111] For poultry, cervical dislocation by stretching is a common method for mass euthanasia, but loss of consciousness may not be instantaneous.[104]

Data suggest that electrical activity in the brain persists for 13 seconds following cervical dislocation,[107] and unlike decapitation, rapid exsanguination does not contribute to loss of consciousness.[112,113]

Advantages—(1) Cervical dislocation is a technique that may induce rapid loss of consciousness.[92,107] (2) It does not chemically contaminate tissue. (3) It is rapidly accomplished.

Disadvantages—(1) Cervical dislocation may be aesthetically displeasing to personnel. (2) Cervical dislocation requires mastering technical skills to ensure loss of consciousness is rapidly induced. (3) Its use is limited to poultry, other small birds, mice, and immature rats and rabbits.

Recommendations—Manual cervical dislocation is a humane technique for euthanasia of poultry, other small birds, mice, rats weighing < 200 g, and rabbits weighing < 1 kg when performed by individuals with a demonstrated high degree of technical proficiency. In lieu of demonstrated technical competency, animals must be sedated or anesthetized prior to cervical dislocation. The need for technical competency is greater in heavy rats and rabbits, in which the large muscle mass in the cervical region makes manual cervical dislocation physically more difficult.[104] In research settings, this technique should be used only when scientifically justified by the user and approved by the Institutional Animal Care and Use Committee.

Those responsible for the use of this technique must ensure that personnel performing cervical dislocation techniques have been properly trained and consistently apply it humanely and effectively.

Decapitation

Decapitation can be used to euthanatize rodents and small rabbits in research settings. It provides a means to recover tissues and body fluids that are chemically uncontaminated. It also provides a means of obtaining anatomically undamaged brain tissue for study.[92]

Although it has been demonstrated that electrical activity in the brain persists for 13 to 14 seconds following decapitation,[107] more recent studies and reports indicate that this activity does not infer the ability to perceive pain, and in fact conclude that loss of consciousness develops rapidly.[107,109]

Guillotines that are designed to accomplish decapitation in adult rodents and small rabbits in a uniformly instantaneous manner are commercially available.

Guillotines are not commercially available for neonatal rodents, but sharp blades can be used for this purpose.

Advantages—(1) Decapitation is a technique that appears to induce rapid loss of consciousness.[97-100] (2) It does not chemically contaminate tissues. (3) It is rapidly accomplished.

Disadvantages—(1) Handling and restraint required to perform this technique may be distressful to animals.[97] (2) The interpretation of the presence of electrical activity in the brain following decapitation has created controversy and its importance may still be open to debate.[97-100,97] (3) Personnel performing this technique should recognize the inherent danger of the guillotine and take adequate precautions to prevent personal injury. (4) Decapitation may be aesthetically displeasing to personnel performing or observing the technique.

Recommendations—This technique is conditionally acceptable if performed correctly and it should be used in research settings when its use is required by the experimental design and approved by the Institutional Animal Care and Use Committee. The equipment used to perform decapitation should be maintained in good working order and serviced on a regular basis to ensure sharpness of blades. The use of plastic cones to restrain animals appears to reduce distress from handling, minimizes the chance of injury to personnel, and improves positioning of the animal in the guillotine. Decapitation of amphibians, fish, and reptiles is addressed elsewhere in this report.

Those responsible for the use of this technique must ensure that personnel who perform decapitation techniques have been properly trained to do so.

Electrocution

Electrocution, using alternating current, has been used as a method of euthanasia for species such as dogs, cattle, sheep, swine, foxes, and mink.[101,102-104] Electrocution induces death by cardiac fibrillation, which causes cerebral hypoxia.[105,106,107] However, animals do not lose consciousness for 10 to 30 seconds or more after onset of cardiac fibrillation. It is imperative that animals be unconscious before being electrocuted. This can be accomplished by any acceptable means, including electrical stunning.[98] Although an effective, 1-step stunning and electrocution method has been described for use in sheep and hogs, euthanasia by electrocution in most species remains a 2-step procedure.[98,108]

Advantages—(1) Electrocution is humane if the animal is first rendered unconscious. (2) It does not chemically contaminate tissues. (3) It is economical.

Disadvantages—(1) Electrocution may be hazardous to personnel. (2) When conventional single-animal probes are used, it may not a useful method for mass euthanasia because so much time is required per animal. (3) It is not a useful method for dangerous, intractable animals. (4) It is aesthetically objectionable because of violent extension and stiffening of the limbs, head, and neck. (5) It may not result in death in small animals (< 5 kg) because ventricular fibrillation and circulatory collapse do not always persist after cessation of current flow.

Recommendations—Euthanasia by electrocution requires special skills and equipment that will ensure passage of sufficient current through the brain to induce loss of consciousness and cardiac fibrillation in the 1-step method for sheep and hogs, or cardiac fibrillation in the unconscious animal when the 2-step procedure is used. Although the method is conditionally acceptable if the aforementioned requirements are met, its disadvantages far outweigh its advantages in most applications. Techniques that apply electric current from head to tail, head to foot, or head to moistened metal plates on which the animal is standing are unacceptable.

Microwave Irradiation

Heating by microwave irradiation is used primarily by neurobiologists to fix brain metabolites *in vivo* while maintaining the anatomic integrity of the brain.[101] Microwave instruments have been specifically designed for use in euthanasia of laboratory mice and rats. The instruments differ in design from kitchen units and may vary in maximal power output from 1.3 to 10 kw. All units direct their microwave energy to the head of the animal. The power required to rapidly halt brain enzyme activity depends on the efficiency of the unit, the ability to tune the resonant cavity and the size of the rodent head.[109] There is considerable variation among instruments in the time required for loss of consciousness and euthanasia. A 10 kw, 2,450 MHz instrument operated at a power of 9 kw will increase the brain temperature of 18 to 28 g mice to 79 C in 330 ms, and the brain temperature of 250 to 420 g rats to 94 C in 800 ms.[109]

Advantages—(1) Loss of consciousness is achieved in less than 100 ms, and death in less than 1 second. (2) This is the most effective method to fix brain tissue *in vivo* for subsequent assay of enzymatically labile chemicals.

Disadvantages—(1) Instruments are expensive. (2) Only animals the size of mice and rats can be euthanized with commercial instruments that are currently available.

Recommendations—Microwave irradiation is a humane method for euthanizing small laboratory rodents if instruments that induce rapid loss of consciousness are used. Only instruments that are designed for this use and have appropriate power and microwave distribution can be used. Microwave ovens designed for domestic and institutional kitchens are absolutely unacceptable for euthanasia.

Thoracic (cardiopulmonary, cardiac) compression

Thoracic (cardiopulmonary cardiac) compression is used to euthanize small- to medium-sized free-ranging birds when alternate techniques described in this report are not practical.[110]

Advantages—(1) This technique is rapid. (2) It is apparently painless. (3) It maximizes carcass use for analytical/contaminant studies.

Disadvantages—(1) It may be considered aesthetically unpleasant by onlookers. (2) The degree of distress is unknown.

Recommendations—Thoracic (cardiopulmonary cardiac) compression is a physical technique for avian euthanasia that has applicability in the field when other methods cannot be used. It is accomplished by bringing the thumb and forefinger of one hand under the bird's wing from the posterior and placing them against the ribs.[18] The forefinger of the other hand is placed against the ventral edge of the sternum, just below the furculum. All fingers are brought together forcefully and held under pressure to stop the heart and lungs. Loss of consciousness and death develop quickly. Proper training is needed in the use of this technique to avoid trauma to the bird. Cardiopulmonary compression is not appropriate for laboratory settings, for large or diving birds,[18] or for other species.

Kill traps

Mechanical kill traps are used for the collection and killing of small, free-ranging mammals for commercial purposes (fur, skin, or meat), scientific purposes, to stop property damage, and to protect human safety. Their use remains controversial, and the panel recognizes that kill traps do not always render a rapid or stress-free death consistent with criteria for euthanasia found elsewhere in this document. For this reason, use of live traps followed by other methods of euthanasia is preferred. There are a few situations when that is not possible or when it may actually be more stressful to the animals or dangerous to humans to use live traps. Although newer technologies are improving kill trap performance in achieving loss of consciousness quickly, individual testing is recommended to be sure the trap is working properly.[18] If kill traps must be used, the most humane available must be chosen,[18-19] as evaluated by use of International Organization for Standardization (ISO) testing procedures,[19] or by the methods of Gilbert,[18] Proulx et al,[21,22] or Hiltz and Roy.[23]

To reach the required level of efficiency, traps may need to be modified from manufacturers production standards. In addition, as specified in scientific studies, trap placement (ground versus tree sets), bait type, set location, selectivity apparatus, body placement modifying devices (eg, sidewings, cones), trigger sensitivity, and trigger type, size, and conformation are essential considerations that could affect a kill trap's ability to reach these standards.

Several kill traps, modifications, and set specifics have been scientifically evaluated and found to meet the aforereferenced standards for various species.[18,21,22,24-27]

Advantage—Free-ranging small mammals may be killed with minimal distress associated with handling and human contact.

Disadvantages—(1) Traps may not afford death within acceptable time periods. (2) Selectivity and efficiency is dependent on the skill and proficiency of the operator.

Recommendations—Kill traps do not always meet the panel's criteria for euthanasia. At the same time, it is recognized that they can be practical and effective for scientific animal collection when used in a manner that ensures selectivity, a swift kill, no damage to body parts needed for field research, and minimal potential for injury of nontarget species.[18,19] Traps need to be checked at least once daily. In those instances when an animal is wounded or captured but not dead, the animal must be killed quickly and humanely. Kill traps should be used only when other acceptable techniques are impossible or have failed. Traps for nocturnal species should not be activated during the day to avoid capture of diurnal species.[18] Trap manufacturers should strive to meet their responsibility of minimizing pain and suffering in target species.

Adjunctive methods

Stunning and pithing, when properly done, induce loss of consciousness but do not ensure death. Therefore, these methods must be used only in conjunction with other procedures,[28] such as pharmacologic agents, exsanguination, or decapitation to euthanatize the animal.

Exsanguination

Exsanguination can be used to ensure death subsequent to stunning, or in otherwise unconscious animals. Because anxiety is associated with extreme hypovolemia, exsanguination must not be used as a sole means of euthanasia.[28] Animals may be exsanguinated to obtain blood products, but only when they are sedated, stunned, or anesthetized.[28]

Stunning

Animals may be stunned by a blow to the head, by use of a nonpenetrating captive bolt, or by use of electric current. Stunning must be followed immediately by a method that ensures death. With stunning, evaluating loss of consciousness is difficult, but it is usually associated with a loss of the menace or blink response, pupillary dilatation, and a loss of coordinated movements. Specific changes in the electroencephalogram and a loss of visually evoked responses are also thought to indicate loss of consciousness.[28,29]

Blow to the head—Stunning by a blow to the head is used primarily in small laboratory animals with thin cranums.[21,28,29] A single sharp blow must be delivered to the central skull bones with sufficient force to produce immediate depression of the central nervous system. When properly done, consciousness is lost rapidly.

Nonpenetrating captive bolt—A nonpenetrating captive bolt may be used to induce loss of consciousness in ruminants, horses, and swine. Signs of effective stunning by captive bolt are immediate collapse and a several second period of tetanic spasm, followed by slow hind limb movements of increasing frequency.[28,29]

Other aspects regarding use of the nonpenetrating captive bolt are similar to the use of a penetrating captive bolt, as previously described.

Electrical stunning—Alternating electrical current has been used for stunning species such as dogs, cattle, sheep, goats, hogs, fish and chickens.[illegible] Experiments with dogs have identified a need to direct the electrical current through the brain to induce rapid loss of consciousness. In dogs, when electricity passes only between fore- and hind limbs or neck and feet, it causes the heart to fibrillate but does not induce sudden loss of consciousness.[illegible] For electrical stunning of any animal, an apparatus that applies electrodes to opposite sides of the head, or in another way directs electrical current immediately through the brain, is necessary to induce rapid loss of consciousness. Attachment of electrodes and animal restraint can pose problems with this form of stunning. Signs of effective electrical stunning are extension of the limbs, opisthotonos, downward rotation of the eyeballs, and tonic spasm changing to clonic spasm, with eventual muscle flaccidity.

Electrical stunning should be followed promptly by electrically induced cardiac fibrillation, exsanguination, or other appropriate methods to ensure death. Refer to the section on electrocution for additional information.

PITHING

In general, pithing is used as an adjunctive procedure to ensure death in an animal that has been rendered unconscious by other means. For some species, such as frogs, with anatomic features that facilitate easy access to the central nervous system, pithing may be used as a sole means of euthanasia, but an anesthetic overdose is a more suitable method.

SPECIAL CONSIDERATIONS

Equine euthanasia

Pentobarbital or a pentobarbital combination is the best choice for equine euthanasia. Because a large volume of solution must be injected, use of an intravenous catheter placed in the jugular vein will facilitate the procedure. To facilitate catheterization of an excitable or fractious animal, a tranquilizer such as acepromazine, or an alpha-2 adrenergic agonist can be administered, but these drugs may prolong time to loss of consciousness because of their effect on circulation and may result in varying degrees of muscular activity and agonal gasping. Opioid agonists or agonists/antagonists in conjunction with alpha-2 adrenergic agonists may further facilitate restraint.

In certain emergency circumstances, such as euthanasia of a horse with a serious injury at a racetrack, it may be difficult to restrain a dangerous horse or other large animal for intravenous injection. The animal might cause injury to itself or to bystanders before a sedative could take effect. In such cases, the animal can be given a neuromuscular blocking agent such as succinylcholine, but the animal must be euthanatized with an appropriate technique as soon as the animal can be controlled. Succinylcholine alone or without sufficient anesthetic must not be used for euthanasia.

Physical methods, including gunshot, are considered conditionally acceptable techniques for equine euthanasia. The penetrating captive bolt is acceptable with appropriate restraint.

Animals intended for human or animal food

In euthanasia of animals intended for human or animal food, chemical agents that result in tissue residues cannot be used, unless they are approved by the US Food and Drug Administration.[illegible] Carbon dioxide is the only chemical currently used for euthanasia of food animals (primarily swine) that does not result in tissue residues. Physical techniques are commonly used for this reason. Carcasses of animals euthanatized by barbituric acid derivatives or other chemical agents may contain potentially harmful residues. These carcasses should be disposed of in a manner that will prevent them from being consumed by human beings or animals.

Selection of a proper euthanasia technique for free-ranging wildlife must take into account the possibility of consumption of the carcass of the euthanatized animal by nontarget predatory or scavenger species. Numerous cases of toxicosis and death attributable to ingestion of pharmaceutically contaminated carcasses in predators and scavengers have been reported.[illegible] Proper carcass disposal must be a part of any euthanasia procedure under free-range conditions where there is potential for consumption toxicity. When carcasses are to be left in the field, a gunshot to the head, penetrating captive bolt, or injectable agents that are nontoxic (potassium chloride in combination with a nontoxic general anesthetic) should be used so that the potential for scavenger or predator toxicity is lessened.

Euthanasia of nonconventional species: zoo, wild, aquatic, and ectothermic animals

Compared with objective information on companion, farm, and laboratory animals, euthanasia of species such as zoo, wild, aquatic, and ectothermic animals has been studied less, and guidelines are more limited. Irrespective of the unique or unusual features of some species, whenever it becomes necessary to euthanatize an animal, death must be induced as painlessly and quickly as possible.

When selecting a means of euthanasia for these species, factors and criteria in addition to those previously discussed must be considered. The means selected will depend on the species, size, safety aspects, location of the animals to be euthanatized, and experience of personnel. Whether the animal to be euthanatized is in the wild, in captivity, or free-roaming are major considerations. Anatomic differences must be considered. For example, amphibians, fish, reptiles, and marine mammals differ anatomically from domestic species. Veins may be difficult to locate. Some species have a carapace or other defensive anatomic adaptations (eg, quills, scales, spines). For physical methods, access to the central nervous system may be difficult because the brain may be small and difficult to locate by inexperienced persons.

Zoo Animals

For captive zoo mammals and birds with related domestic counterparts, many of the means described previously are appropriate. However, to minimize injury to persons or animals, additional precautions such as handling and physical or chemical restraint are important considerations.[48]

Wildlife

For wild and feral animals, many recommended means of euthanasia for captive animals are not feasible. The panel recognizes there are situations involving free-ranging wildlife when euthanasia is not possible from the animal or human safety standpoint, and killing may be necessary. Conditions found in the field, although more challenging than those that are controlled, do not in any way reduce or minimize the ethical obligation of the responsible individual to reduce pain and distress to the greatest extent possible during the taking of an animal's life. Because euthanasia of wildlife is often performed by lay personnel in remote settings, guidelines are needed to assist veterinarians, wildlife biologists, and wildlife health professionals in developing humane protocols for euthanasia of wildlife.

In the case of free-ranging wildlife, personnel may not be trained in the proper use of remote anesthesia, proper delivery equipment may not be available, personnel may be working alone in remote areas where accidental exposure to potent anesthetic medications used in wildlife capture would present a risk to human safety, or approaching the animal within a practical darting distance may not be possible. In these cases, the only practical means of animal collection may be gunshot and kill trapping.[13,49-51] Under these conditions, specific methods chosen must be as age-, species-, or taxonomic/class-specific as possible. The firearm and ammunition should be appropriate for the species and purpose. Personnel should be sufficiently skilled to be accurate, and they should be experienced in the proper and safe use of firearms, complying with laws and regulations governing their possession and use.

Behavioral responses of wildlife or captive nonconventional species (zoo) in close human contact are very different from those of domestic animals. These animals are usually frightened and distressed. Thus, minimizing the amount, degree, and/or cognition of human contact during procedures that require handling is of utmost importance. Handling these animals often requires general anesthesia, which provides loss of consciousness and which relieves distress, anxiety, apprehension, and perception of pain. Even though the animal is under general anesthesia, minimizing auditory, visual, and tactile stimulation will help ensure the most stress-free euthanasia possible. With use of general anesthesia, there are more methods for euthanasia available.

A 2-stage euthanasia process involving general anesthesia, tranquilization, or use of analgesics, followed by intravenous injectable pharmaceuticals, although preferred, is often not practical. Injectable anesthetics are not always legally or readily available to those working in nuisance animal control, and the distress to the animal induced by live capture, transport to a veterinary facility, and confinement in a veterinary hospital prior to euthanasia must be considered in choosing the most humane technique for the situation at hand. Veterinarians providing support to those working with injured or live-trapped, free-ranging animals should take capture, transport, handling distress, and possible carcass consumption into consideration when asked to assist with euthanasia. Alternatives to 2-stage euthanasia using anesthesia include a squeeze cage with intraperitoneal injection of sodium pentobarbital, inhalant agents (CO_2 chamber, CO chamber), and gunshot. In cases where preeuthanasia anesthetics are not available, intraperitoneal injections of sodium pentobarbital, although slower in producing loss of consciousness, should be considered preferable over intravenous injection, if restraint will cause increased distress to the animal or danger to the operator.

Wildlife species may be encountered under a variety of situations. Euthanasia of the same species under different conditions may require different techniques. Even in a controlled setting, an extremely fractious large animal may threaten the safety of the practitioner, bystanders, and itself. When safety is in question and the fractious large animal, whether wild, feral, or domestic, is in close confinement, neuromuscular blocking agents may be used immediately prior to the use of an acceptable form of euthanasia. For this technique to be humane, the operator must ensure they will gain control over the animal and perform euthanasia before distress develops. Succinylcholine is not acceptable as a method of restraint for use in free-ranging wildlife because animals may not be retrieved rapidly enough to prevent neuromuscular blocking agent-induced respiratory distress or arrest.[48]

Diseased, Injured, or Live-Captured Wildlife or Feral Species

Euthanasia of diseased, injured, or live-trapped wildlife should be performed by qualified professionals. Certain cases of wildlife injury (eg, acute, severe trauma from automobiles) may require immediate action, and pain and suffering in the animal may be best relieved most rapidly by physical methods including gunshot or penetrating captive bolt followed by exsanguination.

Birds

Many techniques discussed previously in this report are suitable for euthanasia of captive birds accustomed to human contact. Free-ranging birds may be collected by a number of methods, including nets and live traps, with subsequent euthanasia. For collection by firearm, shotguns are recommended. The bird should be killed outright by use of ammunition loads appropriate for the species to be collected. Wounded birds should be killed quickly by appropriate techniques previously described. Large birds should be anesthetized prior to euthanasia, using general anesthetics.

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Amphibians, Fish, and Reptiles

Euthanasia of ectothermic animals must take into account differences in their metabolism, respiration, and tolerance to cerebral hypoxia. In addition, it is often more difficult to ascertain when an animal is dead. Some unique aspects of euthanasia of amphibians, fishes, and reptiles have been described.[illegible]

Injectable agents—Sodium pentobarbital (60 to 100 mg/kg of body weight) can be administered intravenously, intraabdominally, or intrapleuroperitoneally in most ectothermic animals, depending on anatomic features. Subcutaneous lymph spaces may also be used in frogs and toads. Time to effect may be variable, with death occurring in up to 30 minutes.[illegible] Barbiturates other than pentobarbital can cause pain on injection.[illegible]

Clove oil—Because adequate and appropriate clinical trials have not been performed on fish to evaluate its effects, use of clove oil is not acceptable.

External or topical agents—Tricaine methane sulfonate (TMS, MS-222) may be administered by various routes to euthanatize. For fish and amphibians, this chemical may be placed in water.[illegible] Large fish may be removed from the water, a gill cover lifted, and a concentrated solution from a syringe flushed over the gills. MS 222 is acidic and in concentrations ≥ 500 mg/L should be buffered with sodium bicarbonate to saturation resulting in a solution pH of 7.0 to 7.5.[illegible] MS 222 may also be injected into lymph spaces and pleuroperitoneal cavities.[illegible] These are effective but expensive means of euthanasia.

Benzocaine hydrochloride, a compound similar to TMS, may be used as a bath or in a recirculation system for euthanasia of fish[illegible] or amphibians.[illegible] Benzocaine is not water soluble and therefore is prepared as a stock solution (100 g/L), using acetone or ethanol, which may be irritating to fish tissues. In contrast, benzocaine hydrochloride is water soluble and can be used directly for anesthesia or euthanasia.[illegible] A concentration ≥ 250 mg/L can be used for euthanasia. Fish should be left in the solution for at least 10 minutes following cessation of opercular movement.[illegible]

The anesthetic agent 2-phenoxyethanol is used at concentrations of 0.5 to 0.6 ml/L or 0.3 to 0.4 mg/L for euthanasia of fish. Death is caused by respiratory collapse. As with other agents, fish should be left in solution for 10 minutes following cessation of opercular movement.[illegible]

Inhalant agents—Many reptiles and amphibians, including chelonians, are capable of holding their breath and converting to anaerobic metabolism, and can survive long periods of anoxia (up to 27 hours for some species).[illegible] Because of this ability to tolerate anoxia, induction of anesthesia and time to loss of consciousness may be greatly prolonged when inhalants are used. Death in these species may not occur even after prolonged inhalant exposure.[illegible] Lizards, snakes, and fish do not hold their breath to the same extent and can be euthanatized by use of inhalant agents.

Carbon dioxide—Amphibians,[1] reptiles,[1] and fish[illegible] may be euthanatized with CO_2. Loss of consciousness develops rapidly, but exposure times required for euthanasia are prolonged. This technique is more effective in active species and those with less tendency to hold their breath.

Physical methods—Line drawings of the head of various amphibians and reptiles, with recommended locations for captive bolt or firearm penetration, are available.[illegible] Crocodilians and other large reptiles can also be shot through the brain.[illegible]

Decapitation with heavy shears or a guillotine is effective for some species that have appropriate anatomic features. It has been assumed that stopping blood supply to the brain by decapitation causes rapid loss of consciousness. Because the central nervous system of reptiles, fish, and amphibians is tolerant to hypoxic and hypotensive conditions,[illegible] decapitation must be followed by pithing.[illegible]

Two-stage euthanasia procedures—Propofol and ultrashort-acting barbiturates may be used for these species to produce rapid general anesthesia prior to final administration of euthanasia.

In zoos and clinical settings, neuromuscular blocking agents are considered acceptable for restraint of reptiles if given immediately prior to administration of a euthanatizing agent.

Most amphibians, fishes, and reptiles can be euthanatized by cranial concussion (stunning) followed by decapitation, pithing, or some other physical method.

Severing the spinal cord behind the head by pithing is an effective method of killing some ectotherms. Death may not be immediate unless both the brain and spinal cord are pithed. For these animals, pithing of the spinal cord should be followed by decapitation and pithing of the brain or by another appropriate procedure. Pithing requires dexterity and skill and should only be done by trained personnel. The pithing site in frogs is the foramen magnum, and it is identified by a slight midline skin depression posterior to the eyes with the neck flexed.[illegible]

Cooling—It has been suggested that, when using physical methods of euthanasia in ectothermic species, cooling to 4 C will decrease metabolism and facilitate handling, but there is no evidence that whole body cooling reduces pain or is clinically efficacious.[illegible] Local cooling in frogs does reduce nociception, and this may be partly opioid mediated.[illegible] Immobilization of reptiles by cooling is considered inappropriate and inhumane even if combined with other physical or chemical methods of euthanasia. Snakes and turtles, immobilized by cooling, have been killed by subsequent freezing. This method is not recommended.[illegible] Formation of ice crystals on the skin and in tissues of an animal may cause pain or distress. Quick freezing of deeply anesthetized animals is acceptable.[illegible]

Marine Mammals

Barbiturates or potent opioids (eg, etorphine hydrochloride [M 99] and carfentanil) are the agents of choice for euthanasia of marine mammals,[illegible] although it is recognized their use is not always possible and can

be potentially dangerous to personnel. An accurately placed gunshot may also be a conditionally acceptable method of euthanasia for some species and sizes of stranded marine mammals.[21,more]

For stranded whales or other large cetaceans or pinnipeds, succinylcholine chloride in conjunction with potassium chloride, administered intravenously or intraperitoneally, has been used.[21] This method, which is not an acceptable method of euthanasia as defined in this report, leads to complete paralysis of the respiratory musculature and eventual death attributable to hypoxemia.[22] This method may be more humane than allowing the stranded animal to suffocate over a period of hours or days if no other options are available.

Euthanasia of animals raised for fur production

Animals raised for fur are usually euthanatized individually at the location where they are raised. Although any handling of these species constitutes a stress, it is possible to minimize this by euthanatizing animals in or near their cages. For the procedures described below, please refer to previous sections for more detailed discussion.

Carbon monoxide—For smaller species, CO appears to be an adequate method for euthanasia. Compressed CO is delivered from a tank into an enclosed cage that can be moved adjacent to holding cages. Using the apparatus outside reduces the risk to humans; however, people using this method should still be made aware of the dangers of CO. Animals introduced into a chamber containing 4% CO lost consciousness in 84 ± 14 seconds and were dead within 215 ± 45 seconds.[23] In a study involving electroencephalography of mink being euthanatized with 3.5% CO, the mink were comatose in 21 ± 7 seconds.[24] Only 1 animal should be introduced into the chamber at a time, and death should be confirmed in each case.

Carbon dioxide—Administration of CO_2 is also a good euthanasia method for smaller species and is less dangerous than CO for personnel operating the system. When exposed to 100% CO_2, mink lost consciousness in 19 ± 4 seconds and were dead within 153 ± 10 seconds. When 70% CO_2 was used with 30% O_2, mink were unconscious in 28 seconds, but they were not dead after a 15-minute exposure.[25] Therefore, if animals are first stunned by 70% CO_2, they should be killed by exposure to 100% CO_2 or by some other means. As with carbon monoxide, only one animal should be introduced into the chamber at a time.

Barbiturates—Barbiturate overdose is an acceptable procedure for euthanasia of many species of animals raised for fur. The drug is injected intraperitoneally and the animal slowly loses consciousness. It is important that the death of each animal be confirmed following barbiturate injection. Barbiturates will contaminate the carcass; therefore the skinned carcass cannot be used for animal food.

Electrocution—Electrocution has been used for killing foxes and mink.[26] The electric current must pass through the brain to induce loss of consciousness before electricity is passed through the rest of the body. Electrical stunning should be followed by euthanasia, using some other technique. Cervical dislocation has been used in mink and other small animals and should be done within 20 seconds of electrical stunning.[23] Use of a nose-to-tail or nose-to-foot method[23] alone may kill the animal by inducing cardiac fibrillation, but the animal may be conscious for a period of time before death. Therefore, these techniques are unacceptable.

Prenatal and neonatal euthanasia

When ovarian hysterectomies are performed, euthanasia of fetuses should be accomplished as soon as possible after removal from the dam. Neonatal animals are relatively resistant to hypoxia.[4,21]

Mass euthanasia

Under unusual conditions, such as disease eradication and natural disasters, euthanasia options may be limited. In these situations, the most appropriate technique that minimizes human and animal health concerns must be used. These options include, but are not limited to, CO_2 and physical methods such as gunshot, penetrating captive bolt, and cervical dislocation.

POSTFACE

This report summarizes contemporary scientific knowledge on euthanasia in animals and calls attention to the lack of scientific reports assessing pain, discomfort, and distress in animals being euthanatized. Many reports on various methods of euthanasia are either anecdotal, testimonial narratives, or unsubstantiated opinions and are, therefore, not cited in this report. The panel strongly endorses the need for well-designed experiments to more fully determine the extent to which each procedure meets the criteria used for judging methods of euthanasia.

Each means of euthanasia has advantages and disadvantages. It is unlikely that, for each situation, any means will meet all desirable criteria. It is also impractical for this report to address every potential circumstance in which animals are to be euthanatized. Therefore, the use of professional judgment is imperative.

Failure to list or recommend a means of euthanasia in this report does not categorically condemn its use. There may occasionally be special circumstances or situations in which other means may be acceptable. For research animals, these exceptions should be carefully considered by the attending veterinarian and the Institutional Animal Care and Use Committee. In other settings, professional judgment should be used.

The panel discourages the use of unapproved products for euthanasia, unless the product has a clearly understood mechanism of action and pharmacokinetics, and studies published in the literature that scientifically verify and justify its use. Those responsible for euthanasia decisions have a critically important responsibility to carefully assess any new technique, method, or device, using the panel's criteria. In the absence of definitive proof or reasonable expectation, the best interest of the animal should guide the decision process.

References cited in this report do not represent a comprehensive bibliography on all methods of euthanasia. Persons interested in additional information on a particular aspect of animal euthanasia are encouraged to contact the Animal Welfare Information Center, National Agricultural Library, 10301 Baltimore Blvd, Beltsville, MD 20705.

The Panel on Euthanasia is fully committed to the concept that, whenever it becomes necessary to kill any animal for any reason whatsoever, death should be induced as painlessly and quickly as possible. It has been our charge to develop workable guidelines for veterinarians needing to address this problem, and it is our sincere desire that these guidelines be used conscientiously by all animal care providers. We consider this report to be a work in progress with new additions warranted as results of more scientific studies are published.

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Appendix 1

Agents and methods of euthanasia by species (refer to Appendix 4 for unacceptable agents and methods.)

Species	Acceptable* (refer to Appendix 2 and text for details)	Conditionally acceptable† (refer to Appendix 3 and text for details)
Amphibians	Barbiturates, inhalant anesthetics (in appropriate species), CO_2, CO, tricaine methane sulfonate (TMS, MS 222), benzocaine hydrochloride, double pithing	Penetrating captive bolt, gunshot, stunning and decapitation, decapitation and pithing
Birds	Barbiturates, inhalant anesthetics, CO_2, CO, gunshot (free-ranging only)	N_2, Ar, cervical dislocation, decapitation, thoracic compression (small, free-ranging only)
Cats	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia	N_2, Ar
Dogs	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia	N_2, Ar, penetrating captive bolt, electrocution
Fish	Barbiturates, inhalant anesthetics, CO_2, tricaine methane sulfonate (TMS, MS 222), benzocaine hydrochloride, 2-phenoxyethanol	Decapitation and pithing, stunning and decapitation/pithing
Horses	Barbiturates, potassium chloride in conjunction with general anesthesia, penetrating captive bolt	Chloral hydrate (IV, after sedation), gunshot, electrocution
Marine mammals	Barbiturates, etorphine hydrochloride	Gunshot (cetaceans < 4 meters long)
Mink, fox, and other mammals produced for fur	Barbiturates, inhalant anesthetics, CO_2 (mink require high concentrations for euthanasia without supplemental agents), CO, potassium chloride in conjunction with general anesthesia	N_2, Ar, electrocution followed by cervical dislocation
Nonhuman primates	Barbiturates	Inhalant anesthetics, CO_2, CO, N_2, Ar
Rabbits	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia	N_2, Ar, cervical dislocation (< 1 kg), decapitation, penetrating captive bolt
Reptiles	Barbiturates, inhalant anesthetics (in appropriate species), CO_2 (in appropriate species)	Penetrating captive bolt, gunshot, decapitation and pithing, stunning and decapitation
Rodents and other small mammals	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia, microwave irradiation	Methoxyflurane, ether, N_2, Ar, cervical dislocation (rats < 200 g), decapitation
Ruminants	Barbiturates, potassium chloride in conjunction with general anesthesia, penetrating captive bolt	Chloral hydrate (IV, after sedation), gunshot, electrocution
Swine	Barbiturates, CO_2, potassium chloride in conjunction with general anesthesia, penetrating captive bolt	Inhalant anesthetics, CO, chloral hydrate (IV, after sedation), gunshot, electrocution, blow to the head (< 3 weeks of age)
Zoo animals	Barbiturates, inhalant anesthetics, CO_2, CO, potassium chloride in conjunction with general anesthesia	N_2, Ar, penetrating captive bolt, gunshot
Free-ranging wildlife	Barbiturates IV or IP, inhalant anesthetics, potassium chloride in conjunction with general anesthesia	CO_2, CO, N_2, Ar, penetrating captive bolt, gunshot, kill traps (scientifically tested)

*Acceptable methods are those that consistently produce a humane death when used as the sole means of euthanasia. †Conditionally acceptable methods are those that by the nature of the technique or because of greater potential for operator error or safety hazards might not consistently produce humane death or are methods not well documented in the scientific literature.

Continued on next page.

Appendix 2

Acceptable agents and methods of euthanasia—characteristics and mode of action (refer to text for details)

Agent	Classification	Mode of action	Rapidity	Ease of performance	Safety for personnel	Species suitability	Efficacy and comments
Barbiturates	Hypoxia attributable to depression of vital centers	Direct depression of cerebral cortex, subcortical structures, and vital centers; direct depression of heart muscle	Rapid onset of anesthesia	Animal must be restrained; personnel must be skilled to perform IV injection	Safe except human abuse potential; DEA-controlled substance	Most species	Highly effective when appropriately administered; acceptable IP in small animals and IV
Benzocaine hydrochloride	Hypoxia attributable to depression of vital centers	Depression of CNS	Very rapid, depending on dose	Easily used	Safe	Fish, amphibians	Effective but expensive
Carbon dioxide (bottled gas only)	Hypoxia attributable to depression of vital centers	Direct depression of cerebral cortex, subcortical structures, and vital centers; direct depression of heart muscle	Moderately rapid	Used in closed container	Minimal hazard	Small laboratory animals, birds, cats, small dogs, rabbits, mink (high concentrations required), zoo animals, amphibians, fish, some reptiles, swine	Effective, but time required may be prolonged in immature and neonatal animals
Carbon monoxide (bottled gas only)	Hypoxia	Combines with hemoglobin, preventing its combination with oxygen	Moderate onset time, but insidious so animal is unaware of onset	Requires appropriately maintained equipment	Extremely hazardous, toxic, and difficult to detect	Most small species including dogs, cats, rodents, mink, chinchillas, birds, reptiles, amphibians, zoo animals, rabbits	Effective; acceptable only when equipment is properly designed and operated
Inhalant anesthetics	Hypoxia attributable to depression of vital centers	Direct depression of cerebral cortex, subcortical structures, and vital centers	Moderately rapid onset of anesthesia, excitation may develop during induction	Easily performed with closed container; can be administered to large animals by means of a mask	Must be properly scavenged or vented to minimize exposure to personnel	Some amphibians, birds, cats, dogs, furbearing animals, rabbits, some reptiles, rodents, and other small mammals, zoo animals, fish, free-ranging wildlife	Highly effective provided that subject is sufficiently exposed; ether is conditionally acceptable
Microwave irradiation	Brain enzyme inactivation	Direct inactivation of brain enzymes by rapid heating of brain	Very rapid	Requires training and highly specialized equipment	Safe	Mice, rats	Highly effective for special needs
Penetrating captive bolt	Physical damage to brain	Direct concussion of brain tissue	Rapid	Requires skill, adequate restraint, and proper placement of captive bolt	Safe	Horses, ruminants, swine	Instant loss of consciousness, but motor activity may continue
2-Phenoxyethanol	Hypoxia attributable to depression of vital centers	Depression of CNS	Very rapid, depending on dose	Easily used	Safe	Fish	Effective but expensive
Potassium chloride (intracardially or intravenously in conjunction with general anesthesia only)	Hypoxia	Direct depression of cerebral cortex, subcortical structures, and vital centers secondary to cardiac arrest	Rapid	Requires training and specialized equipment for remote injection anesthesia, and ability to give IV injection of potassium chloride	Anesthetics may be hazardous with accidental human exposure	Most species	Highly effective, some clonic muscle spasms may be observed
Tricaine methane sulfonate (TMS, MS 222)	Hypoxia attributable to depression of vital centers	Depression of CNS	Very rapid, depending on dose	Easily used	Safe	Fish, amphibians	Effective but expensive

Appendix 3

Conditionally acceptable agents and methods of euthanasia—characteristics and modes of action (refer to text for details)

Agent	Classification	Mode of action	Rapidity	Ease of performance	Safety	Species suitability	Efficacy and comments
Blow to the head	Physical damage to brain	Direct concussion of brain tissue	Rapid	Requires skill, adequate restraint, and appropriate force	Safe	Young pigs < 3 weeks old	Must be properly applied to be humane and effective
Carbon dioxide (bottled gas only)	Hypoxia due to depression of vital centers	Direct depression of cerebral cortex, subcortical structures and vital centers; direct depression of heart muscle	Moderately rapid	Used in closed container	Minimal hazard	Nonhuman primates, free-ranging wildlife	Effective, but time required may be prolonged in immature and neonatal animals
Carbon monoxide (bottled gas only)	Hypoxia	Combines with hemoglobin, preventing its combination with oxygen	Moderate onset time, but insidious so animal is unaware of onset	Requires appropriately maintained equipment	Extremely hazardous, toxic, and difficult to detect	Nonhuman primates, free-ranging wildlife	Effective; acceptable only when equipment is properly designed and operated
Cervical dislocation	Hypoxia due to disruption of vital centers	Direct depression of brain	Moderately rapid	Requires training and skill	Safe	Poultry, birds, laboratory mice, rats (< 200 g), rabbits (< 1 kg)	Irreversible; violent muscle contractions can occur after cervical dislocation
Chloral hydrate	Hypoxia from depression of respiratory center	Direct depression of brain	Rapid	Personnel must be skilled to perform IV injection	Safe	Horses, ruminants, swine	Animals should be sedated prior to administration
Decapitation	Hypoxia due to disruption of vital centers	Direct depression of brain	Rapid	Requires training and skill	Guillotine poses potential employee injury hazard	Laboratory rodents; small rabbits; birds; some fish, amphibians, and reptiles (latter 3 with pithing)	Irreversible; violent muscle contraction can occur after decapitation
Electrocution	Hypoxia	Direct depression of brain and cardiac fibrillation	Can be rapid	Not easily performed in all instances	Hazardous to personnel	Used primarily in sheep, swine, foxes, mink (with cervical dislocation), ruminants, animals > 5 kg	Violent muscle contractions occur at same time as loss of consciousness
Gunshot	Hypoxia due to disruption of vital centers	Direct concussion of brain tissue	Rapid	Requires skill and appropriate firearm	May be dangerous	Large domestic and zoo animals, reptiles, amphibians, wildlife, cetaceans (< 4 meters long)	Instant loss of consciousness, but motor activity may continue
Inhalant anesthetics	Hypoxia due to depression of vital centers	Direct depression of cerebral cortex, subcortical structures, and vital centers	Moderately rapid onset of anesthesia; excitation may develop during induction	Easily performed with closed container; can be administered to large animals by means of a mask	Must be properly scavenged or vented to minimize exposure to personnel; ether has explosive potential and exposure to ether may be stressful	Nonhuman primates, swine; ether is conditionally acceptable for rodents and small mammals; methoxyflurane is conditionally acceptable for rodents and small mammals	Highly effective provided that subject is sufficiently exposed
Nitrogen, argon	Hypoxia	Reduces partial pressure of oxygen available to blood	Rapid	Used in closed chamber with rapid filling	Safe if used with ventilation	Cats, small dogs, birds, rodents, rabbits, other small species, mink, zoo animals, nonhuman primates, free-ranging wildlife	Effective except in young and neonates; an effective agent, but other methods are preferable
Penetrating captive bolt	Physical damage to brain	Direct concussion of brain tissue	Rapid	Requires skill, adequate restraint and proper placement of captive bolt	Safe	Dogs, rabbits, zoo animals, reptiles, amphibians, free-ranging wildlife	Instant loss of consciousness, but motor activity may continue
Pithing	Hypoxia due to disruption of vital centers, physical damage to brain	Trauma of brain and spinal cord tissue	Rapid	Easily performed but requires skill	Safe	Some ectotherms	Effective, but death not immediate unless brain and spinal cord are pithed
Thoracic compression	Hypoxia and cardiac arrest	Physical interference with cardiac and respiratory function	Moderately rapid	Requires training	Safe	Small- to medium-sized free-ranging birds	Apparently effective

Appendix 4

Some unacceptable agents and methods of euthanasia (refer to text for details)

Agent or method	Comments
Air embolism	Air embolism may be accompanied by convulsions, opisthotonos, and vocalization. If used, it should be done only in anesthetized animals.
Blow to the head	Unacceptable for most species.
Burning	Chemical or thermal burning of an animal is not an acceptable method of euthanasia.
Chloral hydrate	Unacceptable in dogs, cats, and small mammals.
Chloroform	Chloroform is a known hepatotoxin and suspected carcinogen and, therefore, is extremely hazardous to personnel.
Cyanide	Cyanide poses an extreme danger to personnel and the manner of death is aesthetically objectionable.
Decompression	Decompression is unacceptable for euthanasia because of numerous disadvantages. (1) Many chambers are designed to produce decompression at a rate 15 to 60 times faster than that recommended as optimum for animals, resulting in pain and distress attributable to expanding gases trapped in body cavities. (2) Immature animals are tolerant of hypoxia, and longer periods of decompression are required before respiration ceases. (3) Accidental recompression, with recovery of injured animals, can occur. (4) Bleeding, vomiting, convulsions, urination, and defecation, which are aesthetically unpleasant, may develop in unconscious animals.
Drowning	Drowning is not a means of euthanasia and is inhumane.
Exsanguination	Because of the anxiety associated with extreme hypovolemia, exsanguination should be done only in sedated, stunned, or anesthetized animals.
Formalin	Direct immersion of an animal into formalin, as a means of euthanasia, is inhumane.
Household products and solvents	Acetone, quaternary compounds (including CCl_4), laxatives, clove oil, dimethylketone, quaternary ammonium products*, antacids, and other commercial and household products or solvents are not acceptable agents for euthanasia.
Hypothermia	Hypothermia is not an appropriate method of euthanasia.
Neuromuscular blocking agents (nicotine, magnesium sulfate, potassium chloride, all curariform agents)	When used alone, these drugs all cause respiratory arrest before loss of consciousness, so the animal may perceive pain and distress after it is immobilized.
Rapid freezing	Rapid freezing as a sole means of euthanasia is not considered to be humane. If used, animals should be anesthetized prior to freezing.
Strychnine	Strychnine causes violent convulsions and painful muscle contractions.
Stunning	Stunning may render an animal unconscious, but it is not a method of euthanasia (except for neonatal animals with thin craniums). If used, it must be immediately followed by a method that ensures death.
Tricaine methane sulfonate (TMS, MS 222)	Should not be used for euthanasia of animals intended as food.

*Roccal D Plus, Pharmacia & Upjohn, Kalamazoo, Mich.

Attachment C

Practice Advisory for Intraoperative Awareness and Brain Function Monitoring

*A Report by the American Society of Anesthesiologists Task Force on Intraoperative Awareness**

PRACTICE advisories are systematically developed reports that are intended to assist decision-making in areas of patient care. Advisories provide a synthesis and analysis of expert opinion, clinical feasibility data, open forum commentary, and consensus surveys. Advisories are not intended as standards, guidelines, or absolute requirements. They may be adopted, modified, or rejected according to clinical needs and constraints.

The use of practice advisories cannot guarantee any specific outcome. Practice advisories summarize the state of the literature and report opinions derived from a synthesis of task force members, expert consultants, open forums and public commentary. Practice advisories are not supported by scientific literature to the same degree as are standards or guidelines because sufficient numbers of adequately controlled studies are lacking. Practice advisories are subject to periodic revision as warranted by the evolution of medical knowledge, technology, and practice.

Methodology

A. Definitions

Intraoperative awareness under general anesthesia is a rare occurrence, with a reported incidence of 0.1-0.2%.[1-4] Significant psychological sequelae (e.g., post traumatic stress disorder) may occur following an episode of intraoperative awareness, and affected patients may remain severely disabled

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* Developed by the American Society of Anesthesiologists Task Force on Intraoperative Awareness: Jeffrey L. Apfelbaum, M.D., (Chair), Chicago, Illinois; James F. Arens, M.D., Houston, Texas; Daniel J. Cole, M.D., Phoenix, Arizona; Richard T. Connis, Ph.D., Woodinville, Washington; Karen B. Domino, M.D., Seattle, Washington; John C. Drummond, M.D., San Diego, California; Cor J. Kalkman, M.D., Ph.D., Utrecht, the Netherlands; Ronald D. Miller, M.D., San Francisco, California; David G. Nickinovich, Ph.D., Bellevue, Washington; and Michael M. Todd, M.D., Iowa City, Iowa.

Supported by the American Society of Anesthesiologists under the direction of James F. Arens, M.D., Chair, Committee on Practice Parameters. A list of the references used to develop this Advisory is available by writing to the American Society of Anesthesiologists.

Address reprint requests to the American Society of Anesthesiologists: 520 N. Northwest Highway, Park Ridge, Illinois 60068-2573

The following practice advisory was approved by the ASA House of Delegates on October 28, 2005. It should be considered final. This practice advisory will be published in a future issue of the journal *Anesthesiology*.

for extended periods of time.[3] However, in some circumstances, intraoperative awareness may be unavoidable in order to achieve other critically important anesthetic goals.

The following terms or concepts discussed in this Advisory include: consciousness, general anesthesia, depth of anesthesia or depth of hypnosis, recall, amnesia, intraoperative awareness, and brain function monitors. Consistent definitions for these terms are not available in the literature. For purposes of this Advisory, these terms are operationally defined or identified as follows:

(1) Consciousness: Consciousness is a state in which a patient is able to process information from his or her surroundings. Consciousness is assessed by observing a patient's purposeful responses to various stimuli. Identifiers of purposeful responses include organized movements following voice commands or noxious/painful stimuli.[†] For example, opening of the eyes is one of several possible identifiers or markers of consciousness. Purposeful responses may be absent when paralysis is present as a consequence of neurological disease or the administration of a neuromuscular blocking drug.

(2) General anesthesia: General anesthesia is defined as a drug-induced loss of consciousness during which patients are not arousable, even by painful stimulation.[‡] The ability to maintain ventilatory function independently is often impaired. Patients often require assistance in maintaining a patent airway, and positive pressure ventilation may be required because of depressed spontaneous ventilation or drug-induced depression of neuromuscular function. Cardiovascular function may be impaired.

(3) Depth of anesthesia: Depth of anesthesia or depth of hypnosis refers to a continuum of progressive central nervous system depression and decreased responsiveness to stimulation.

[†] Reflex withdrawal from a painful stimulus is NOT considered a purposeful response, as indicated by the "continuum of depth of sedation, definition of general anesthesia, and levels of sedation/analgesia;" American Society of Anesthesiologists, 2004.

[‡] American Society of Anesthesiologists: Continuum of depth of sedation, definition of general anesthesia, and levels of sedation/analgesia;" ASA Standards, Guidelines and Statements, 2004.

The following practice advisory was approved by the ASA House of Delegates on October 28, 2005. It should be considered final. This practice advisory will be published in a future issue of the journal Anesthesiology.

(4) Recall: For the purpose of this Advisory, recall is the patient's ability to retrieve stored memories. Recall is assessed by a patient's report of previous events, in particular, events that occurred during general anesthesia. *Explicit memory* is assessed by the patient's ability to recall specific events that took place during general anesthesia. *Implicit memory* is assessed by changes in performance or behavior without the ability to recall specific events that took place during general anesthesia that led to those changes.[6] A report of recall may be spontaneous or it may only be elicited in a structured interview or questionnaire. This Advisory does not address implicit memory.

(5) Amnesia: Amnesia is the absence of recall. Many anesthetic drugs produce amnesia at concentrations well below those necessary for suppression of consciousness. Anterograde amnesia is intended when a drug with amnestic properties is administered before induction of anesthesia. Retrograde amnesia is intended when a drug such as a benzodiazepine is administered after an event that may have caused or been associated with intraoperative consciousness in the hope that it will suppress memory formation and "rescue" from recall.

(6) Intraoperative awareness: Intraoperative awareness occurs when a patient becomes conscious during a procedure performed under general anesthesia and subsequently has recall of those events. For the purpose of this Advisory, recall is limited to explicit memory, and does not include the time before general anesthesia is fully induced or the time of emergence from general anesthesia, when arousal and return of consciousness are intended. Dreaming is not considered intraoperative awareness.

(7) Brain function monitor: Brain function monitors are devices that record or process brain electrical activity and convert these signals mathematically into a continuous measure typically scaled from 0 to 100. In addition to spontaneous cortical electrical activity (electroencephalogram, EEG), these devices may also record and process evoked cortical and

subcortical activity (auditory evoked potentials, or AEP) as well as electromyographic (EMG) activity from scalp muscles. For the purpose of this Advisory, only monitors purported to measure depth of anesthesia or hypnosis will be considered. Other, non-EEG/AEP/EMG devices are also available, but are not addressed by this Advisory.

B. Purposes of the Advisory

Intraoperative awareness under general anesthesia is an important clinical problem that clearly is within the foundation of training and continuing medical education in anesthesiology. The purposes of this Advisory are to identify risk factors that may be associated with intraoperative awareness, provide decision tools that may enable the clinician to reduce the frequency of unintended intraoperative awareness, stimulate the pursuit and evaluation of strategies that may prevent or reduce the frequency of intraoperative awareness, and provide guidance for the intraoperative use of brain function monitors as they relate to intraoperative awareness.

C. Focus

This Advisory focuses on the perioperative management of patients who are undergoing a procedure during which general anesthesia is administered. This Advisory is not intended for the perioperative management of minimal, moderate, or deep sedation in the OR or ICU; regional or local anesthesia without general anesthesia; monitored anesthesia care; tracheal intubation of patients or those undergoing resuscitation in emergency trauma after the administration of a neuromuscular block, or intentional intraoperative wake-up testing (e.g., for the purpose of assessing intraoperative neurologic function). In addition, this Advisory is not intended to address the perioperative management of pediatric patients.

D. Application

This Advisory is intended for use by anesthesiologists, other physicians who supervise the administration of general anesthesia, and all other individuals who administer general anesthesia.

The following practice advisory was approved by the ASA House of Delegates on October 25, 2005. It should be considered final. This practice advisory will be published in a future issue of the journal *Anesthesiology*.

The Advisory may also serve as a resource for other physicians and health care professionals who are involved in the perioperative management of patients receiving general anesthesia.

E. Task Force Members and Consultants

The American Society of Anesthesiologists (ASA) appointed this Task Force of 10 members to (1) review and assess the currently available scientific literature on intraoperative awareness, (2) obtain expert consensus and public opinion, and (3) develop a practice advisory. The Task Force is comprised of anesthesiologists from various geographic areas of the United States, an anesthesiologist from the Netherlands, and two methodologists from the ASA Committee on Practice Parameters.

The ASA appointed the 10 members to the Task Force because of their knowledge or expertise in the medical specialty of anesthesiology, and the development of practice parameters. The members include but are not limited to anesthesiologists with specialized knowledge or expertise in the area of neuroanesthesiology. Two of the 10 members disclosed receipt of funds from or a financial interest in a company developing or manufacturing brain function monitors, which companies have a direct financial interest in the expanded use of such monitors. Other members may have received funds from or have a financial interest in other companies, such as developers or manufacturers of anesthetics, that may be indirectly affected by the expanded use of brain function monitors. The Task Force did not request its members to disclose such interests because they were deemed too remote and speculative to present conflicts of interest.

The Task Force, in turn, sought input from consultants, many of whom who had particularized knowledge, expertise and/or interest in intraoperative awareness and brain function monitors. Such knowledge or expertise is based in part in some cases on research or investigational activities funded by a company developing or manufacturing brain function monitors. Fifty-four percent of the consultants disclosed receipt of funds from or a financial interest in a company developing or

manufacturing brain function monitors. Consultants also may have received funds from or have a financial interest in other companies that may be indirectly affected by the use of brain function monitors. The Task Force did not request its consultants to disclose such interests because they were deemed too remote and speculative to present conflicts of interest.

The Task Force used a six-step process. First, the members reached consensus on the criteria for evidence of effective perioperative interventions for the prevention of intraoperative awareness. Second, they evaluated original articles published in peer-reviewed journals relevant to this issue. Third, consultants who had expertise or interest in intraoperative awareness and who practiced or worked in diverse settings (e.g., scientists and/or physicians in academic and private practice) were asked to participate in opinion surveys on the effectiveness of various perioperative management strategies, and to review and comment on a draft of the Advisory developed by the Task Force. Fourth, additional opinions were solicited from a random sample of active members of the ASA. Fifth, the Task Force held open forums at three national and international anesthesia meetings to solicit input on the key concepts of this Advisory. Sixth, all available information was used to build consensus within the Task Force on the Advisory.

The draft document was made available for review on the ASA website, and commentary was invited via e-mail announcement to all ASA members. All submitted comments were considered by the Task Force in preparing the final draft.

F. Availability and Strength of Evidence

Practice advisories are developed by a protocol similar to that of an ASA evidence-based practice guideline, including a systematic search and evaluation of the literature. However, practice advisories lack the support of a sufficient number of adequately controlled studies to permit aggregate analyses of data with rigorous statistical techniques such as meta-analysis. Nonetheless, literature-based evidence from case reports and other descriptive studies are considered during the

pgs. 10-18
- Dispositional Report, January 25, 1983, pgs. 19-21
- Transcript of Proceedings, Report and Disposition, January 25, 1983, pgs. 22-26

80. Family Court of St. Louis County, Missouri, juvenile records, 6/4/85-9/13/85

81. Motion to Exclude Other Bad Acts and Irrelevant Prior Criminal Activity, State v. Castillo, Clark County, Case No. C133336, July 30, 1996

82-100 Omitted

101. Bennett v. State, No. 38934 Respondent's Answering Brief (November 26, 2002)

102. State v. Colwell, No. C123476, Findings, Determinations and Imposition of Sentence (August 10, 1995)

103. Doleman v. State, No. 33424 Order Dismissing Appeal (March 17, 2000)

104. Farmer v. Director, Nevada Dept. of Prisons, No. 18052 Order Dismissing Appeal (March 31, 1988)

105. Farmer v. State, No. 22562, Order Dismissing Appeal (February 20, 1992)

106. Farmer v. State, No. 29120, Order Dismissing Appeal (November 20, 1997)

107. Feazell v. State, No. 37789, Order Affirming in Part and Vacating in Part (November 14, 2002)

108. Hankins v. State, No. 20780, Order of Remand (April 24, 1990)

109. Hardison v. State, No. 24195, Order of Remand (May 24, 1994)

110. Hill v. State, No. 18253, Order Dismissing Appeal (June 29, 1987)

111. Jones v. State, No. 24497 Order Dismissing Appeal (August 28, 1996)

112. Jones v. McDaniel, et al., No. 39091, Order of Affirmance (December 19, 2002)

113. Milligan v. State, No. 21504 Order Dismissing Appeal (June 17, 1991)

114. Milligan v. Warden, No. 37845, Order of Affirmance (July 24, 2002)

115. Moran v. State, No. 28188, Order Dismissing Appeal (March 21, 1996)

116. Neuschafer v. Warden, No. 18371, Order Dismissing Appeal (August 19, 1987)

117. Nevius v. Sumner (Nevius I), Nos. 17059, 17060, Order Dismissing Appeal and Denying Petition (February 19, 1986)

118. Nevius v. Warden (Nevius II), Nos. 29027, 29028, Order Dismissing Appeal and Denying Petition for Writ of Habeas Corpus (October 9, 1996)

119. Nevius v. Warden (Nevius III), Nos. 29027, 29028, Order Denying Rehearing (July 17, 1998)

120. Nevius v. McDaniel, D. Nev. No. CV-N-96-785-HDM-(RAM), Response to Nevius' Supplemental Memo at 3 (October 18, 1999)

121. O'Neill v. State, No. 39143, Order of Reversal and Remand (December 18, 2002)

122. Rider v. State, No. 20925, Order (April 30, 1990)

123. Riley v. State, No. 33750, Order Dismissing Appeal (November 19, 1999)

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124. Rogers v. Warden, No. 22858, Order Dismissing Appeal (May 28, 1993), Amended Order Dismissing Appeal (June 4, 1993)

125. Rogers v. Warden, No. 36137, Order of Affirmance (May 13, 2002)

126. Sechrest v. State, No 29170, Order Dismissing Appeal (November 20, 1997)

127. Smith v. State, No. 20959, Order of Remand (September 14, 1990)

128. Stevens v. State, No. 24138, Order of Remand (July 8, 1994)

129. Wade v. State, No. 37467, Order of Affirmance (October 11, 2001)

130. Williams v. State, No. 20732, Order Dismissing Appeal (July 18, 1990)

131. Williams v. Warden, No. 29084, Order Dismissing Appeal (August 29, 1997)

132. Ybarra v. Director, Nevada State Prison, No. 19705, Order Dismissing Appeal (June 29, 1989)

133. Ybarra v. Warden, No. 43981, Order Affirming in Part, Reversing in Part, and Remanding (November 28, 2005)

134. Ybarra v. Warden, No. 43981, Order Denying Rehearing (February 2, 2006)

135. Rippo v. State; Bejarano v. State, No. 44094, No. 44297, Order Directing Oral Argument (March 16, 2006)

136. State v. Rippo, Case No. C106784, Supplemental Brief in Support of Defendant's Petition for Writ of Habeas Corpus (Post-Conviction), February 10, 2004

137. State v. Rippo, Case No. C106784, Findings of Fact, Conclusions of Law and Order, December 1, 2004

138. Rippo v. State, S. C. Case No. 44094, Appellant's Opening Brief, May 19, 2005

139. Rippo v. State, S. C. Case No. 44094, Respondent's Answering Brief, June 17, 2005

140. Rippo v. State, S. C. Case No. 44094, Appellant's Reply Brief, September 28, 2005

141. Rippo v. State, S. C. Case No. 44094, Appellant's Supplemental Brief As Ordered By This Court, December 12, 2005

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142. Nevada Department of Corrections Confidential Execution Manual, Procedures for Executing the Death Penalty, Nevada State Prison, Revised February 2004

142-A. Nevada Department of Corrections Confidential Execution Manual, Revised October 2007 with transmittal letter dated June 13, 2008

143. Brief of Amici Curiae in Support of Petitioner, United States Supreme Court Case No. 03-6821, David Larry Nelson v. Donal Campbell and Grantt Culliver, October Term, 2003

144. Killer makes final requests, LAS VEGAS SUN, March 18, 2004

145. Leonidas G. Koniaris, Teresa A. Zimmers, David A. Lubarsky, and Jonathan P. Sheldon, Inadequate Anaesthesia in Lethal Injection for Execution, Vol. 365, April 16, 2005, at http://www.thelancet.com

146. Declaration of Mark J. S. Heath, M.D., May 16, 2006, including attachments A-F

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147. Reporter's Transcript of Proceedings, Volume I, Castillo v. State, Clark County, Grand Jury, Case No. C133336, January 11, 1996

148. Reporter's Transcript of Proceedings, Volume II, Castillo v. State, Clark County, Grand Jury, Case No. C133336, January 18, 1996

149. Transcript (Arraignment), Castillo v. State, Clark County, Case No. C133336, January 24, 1996

150. Transcript, Castillo v. State, Clark County, Case No. C133336, March 13, 1996

151. Transcript, Castillo v. State, Clark County, Case No. C133336, April 3, 1996

152. Recorder's Transcript Re: Defendant Castillo's Petition for Writ of Habeas Corpus, Defendant Platou's Petition for Writ of Habeas Corpus, State's Motion to Amend Indictment, Castillo v. State, Clark County, Case No.

C133336, May 1, 1996

153. Reporter's Transcript of Proceedings in Re: Defendant Castillo's Petition for Writ of Habeas Corpus and Defendant Platou's Petition for Writ of Habeas Corpus, Castillo v. State, Clark County, Case No. C133336, May 29, 1996

154. Transcript, Castillo v. State, Clark County, Case No. C133336, July 22, 1996

155. Reporter's Transcript of Proceedings In Re: Motions, Castillo v. State, Clark County, Case No. C133336, August 12, 1996

156. Transcript, Castillo v. State, Clark County, Case No. C133336, August 21, 1996

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157. Trial Transcript, Volume I, Castillo v. State, Clark County, Case No. C133336, August 26, 1996

158. Trial Transcript, Volume II, Castillo v. State, Clark County, Case No. C133336, August 27, 1996 2:10 PM

159. Trial Transcript, Volume II, Castillo v. State, Clark County, Case No. C133336, August 27, 1996 4:40 PM

160. Trial Transcript, Volume III, Morning Session, Castillo v. State, Clark County, Case No. C133336, August 28, 1996

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161. Reporter's Transcript of Trial, Volume III, Afternoon Session, Castillo v. State, Clark County, Case No. C133336, August 28, 1996

162. Trial Transcript, Volume IV - Morning Session, Castillo v. State, Clark County, Case No. C133336, August 29, 1996 9:30 A.M.

163. Reporter's Transcript of Jury Trial, Volume IV - Afternoon Session, Castillo v. State, Clark County, Case No. C133336, August 29, 1996 1:15 P.M.

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164. Trial Transcript, Volume V - Morning Session, Castillo v. State, Clark County, Case No. C133336, September 3, 1996 9:35 A.M.

165. Reporter's Transcript of Trial, Volume V, Afternoon Session, Castillo v. State, Clark County, Case No. C133336, September 3, 1996

166. Trial Transcript, Volume VI, Castillo v. State, Clark County, Case No. C133336, September 4, 1996 11:35 A.M.

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167. Penalty Hearing Transcript, Castillo v. State, Clark County, Case No. C133336, September 19, 1996

168. Reporter's Transcript, Penalty Hearing, Volume I-Afternoon Session, Castillo v. State, Clark County, Case No. C133336, September 19, 1996

169. Reporter's Transcript, Penalty Hearing, Volume II - Morning Session, Castillo v. State, Clark County, Case No. C133336, September 20, 1996

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170. Reporter's Transcript, Penalty Hearing, Volume II - Afternoon Session, Castillo v. State, Clark County, Case No. C133336, September 20, 1996

171. Reporter's Transcript, Penalty Hearing - Volume III - Morning Session, Castillo v. State, Clark County, Case No. C133336, September 24, 1996

172. Reporter's Transcript, Penalty Hearing - Volume III - Afternoon Session, Castillo v. State, Clark County, Case No. C133336, September 24, 1996

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173. Reporter's Transcript, Penalty Hearing - Volume IV, Castillo v. State, Clark County, Case No. C133336, September 25, 1996

174. Reporter's Transcript, Castillo v. State, Clark County, Case No. C133336, November 4, 1996

175. Reporter's Transcript of Motion to Withdraw, Castillo v. State, Clark County, Case No. C133336, December 16, 1996

176. Transcript, Motion for Appointment of Psychiatrist and Co-Counsel, Castillo v. State, Clark County, Case No. C133336, December 6, 1999

177. Reporter's Transcript, State's Motion to Place on Calendar, Castillo v. State, Clark County, Case No. C133336, October 23, 2000

178. Reporter's Transcript, Confirmation of Counsel, Castillo v. State, Clark County, Case No. C133336, October 26, 2000

179. Recorder's Transcript, Defendant's Motion for Extension of Time to File Defendant's Supplemental Brief in Support of Defendant's Petition for Writ of Habeas Corpus, Castillo v. State, Clark County, Case No. C133336, March 12, 2001

180. Recorder's Transcript Re: Argument, Castillo v. State, Clark County, Case No. C133336, March 4, 2002

181. Recorder's Transcript Re: Request of the Court: Argument, Castillo v. State, Clark County, Case No. C133336, April 10, 2002

182. Recorder's Transcript Re: request of the Court: Argument, Castillo v. State, Clark County, Case No. C133336, May 8, 2002

183. Recorder's Transcript Re: Evidentiary Hearing, Castillo v. State, Clark County, Case No. C133336, August 2, 2002

184. Recorder's Transcript Re: Evidentiary Hearing, Castillo v. State, Clark County, Case No. C133336, January 22, 2003

RECEIPT OF COPY

RECEIPT OF A COPY of the above and foregoing EXHIBITS TO PETITION FOR WRIT OF HABEAS CORPUS is hereby acknowledged, this 18th day of September, 2009.

OFFICE OF THE DISTRICT ATTORNEY

BY _____
STEVEN OWENS, Deputy District Attorney
200 Lewis Avenue
Las Vegas, Nevada 89155

CERTIFICATE OF MAILING

In accordance with Rule 5(b)(2)(B) of the Nevada Rules of Civil Procedure, the undersigned hereby certifies that on the 18th day of September, 2009, a true and correct copy of the foregoing EXHIBITS TO PETITION FOR WRIT OF HABEAS CORPUS was deposited in the United States mail, first class postage fully prepaid thereon, addressed to:

Catherine Cortez Masto, Nevada Attorney General
Heather D. Procter, Deputy Attorney General
Attorney General's Office
100 North Carson Street
Carson City, Nevada 89701-4717

_____
An employee of the Federal Public Defender

EXHIBIT 142

EXHIBIT 142

CONFIDENTIAL

EXECUTION MANUAL

FOR EXECUTING THE DEATH PENALTY

AT SAN QUENTIN STATE PRISON

CONFIDENTIAL

REVISED: February 2004

Section I.

AUTHORITY – NEVADA REVISED STATUTES

NRS 176.345 Proceedings when conviction carries death penalty.

1. When a judgment of death has been pronounced, a certified copy of the judgment of conviction must be [illegible] and attested in triplicate by the clerk under the seal of the court. There must be attached to the triplicate copies a warrant signed by the judge, attested by the clerk, under the seal of the court, which:
   a. [illegible] the fact of the conviction and judgment;
   b. Appoints a week, the first day being Monday and the last day being [illegible] within which the judgment is to be executed, which must not be less than [illegible] more than 90 days from the time of judgment; and
   c. Directs the sheriff to deliver the prisoner to such authorized person as the director of the department of prisons designates to receive the prisoner, for execution. The prison must be designated in the warrant.
2. The original of the triplicate copies of the judgment of conviction and warrant must be filed in the office of the county clerk [illegible] of the triplicate copies must be [illegible] delivered by the clerk to the [illegible] the judgment. One of the triplicate copies must be delivered by the sheriff, with the prisoner, to such authorized person as the director of the department of prisons designates, and is the warrant and authority of the [illegible] the imprisonment and execution of the prisoner, as therein provided and commanded [illegible] his certified copy of the judgment [illegible] county in which it was entered. The [illegible] sheriff to deliver the [illegible]. The third triplicate copy must be [illegible] by the [illegible] endorsed thereon.

NRS 176.355 [illegible]

1. The judgment of death [illegible] by an injection of [illegible]
2. The director of the department [illegible] shall:
   a. Execute a sentence of death within the week, the first day being [illegible] the last day being Sunday, that the [illegible] or [illegible]. The director may [illegible] during the week [illegible] is not enjoined by a [illegible].
   b. Select the drug [illegible] to be used for the [illegible] the [illegible].
   c. Be present at the execution.
   d. Notify those members of the immediate family [illegible] who have [illegible] 176.357, requested to be informed of the [illegible] and place scheduled for the execution.
   e. [illegible] competent physician, the [illegible] and [illegible] over the age of 21 years to be present at the execution. The [illegible]

2

8.TDA-00004645

shall give preference to those eligible members or representatives of the immediate family of the victim who requested, pursuant to NRS 176.[illegible] to attend the execution.

3. The execution must take place at the state prison.

4. A person who has not been invited by the director may not witness the execution.

NRS 176.357 Request for notification of execution of death penalty; request to attend.

1. If after a conviction for murder a judgment of death has been pronounced, each member of the immediate family of the victim who is 21 years of age or older may submit a written request to the director to be informed of the time, date and place scheduled for the execution of the sentence of death. The request for notification may be accompanied by a written request to attend or nominate a representative to attend the execution.

2. As used in this section, "immediate family" means persons who are related by blood, adoption or marriage, within the second degree of consanguinity or affinity.

NRS 176.365 Director of department of corrections to make return on death warrant. After the execution, the director of the department of prisons must make a return upon the death warrant to the court by which the judgment was rendered, showing the time, place, mode and manner in which it was [illegible]

NRS 176.495 New warrant [illegible]

1. If for any reason a judgment of death has not been executed, and it remains in force, the court in which the conviction was had must, upon the application of the attorney general or the district attorney of the county in which the conviction was had, cause another warrant to be drawn, signed by the judge and attested by the clerk under the seal of the court, and delivered to the director of the department of prisons.

2. The warrant must state the conviction and judgment and appoint a week, the first day being Monday and the last day being Sunday, within which the judgment is to be executed. The first day of that week must be not less than 15 days nor more than 30 days after the date of the warrant. The director shall execute a sentence of death within the week the judgment is to be executed, as designated by the district court. The director may execute the judgment at any time during that week if a stay of execution is not entered by a court of appropriate jurisdiction.

3. Where sentence was imposed by a district court composed of three judges, the district judge before whom the confession or plea was made, or his successor in office, shall designate the week of execution, the first day being Monday and the last day being Sunday, and sign the warrant.

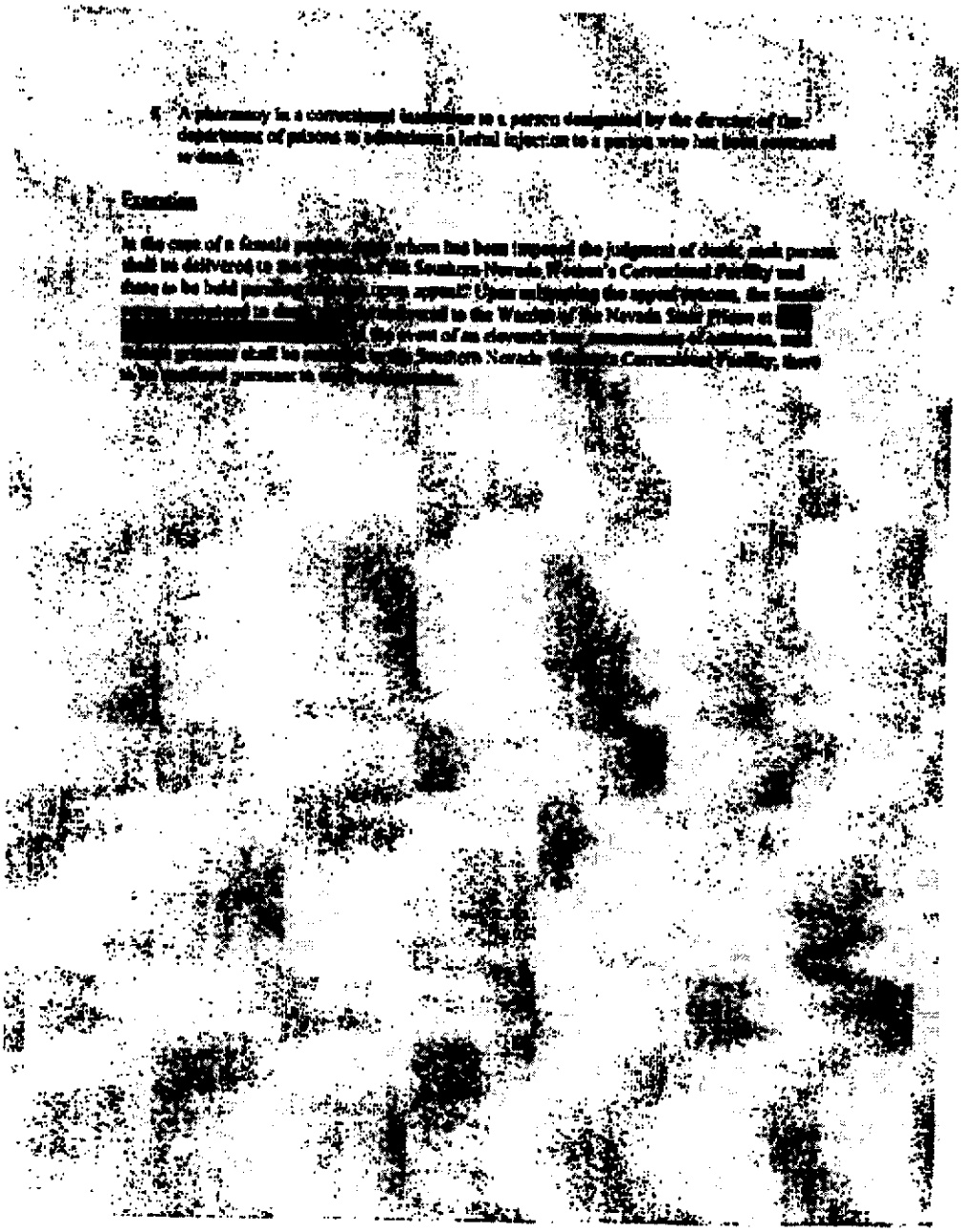
NRS 454.[illegible] Authority to possess and administer dangerous drug.

8. Any person designated by the head of a correctional institution.

NRS 454.221 Furnishing dangerous drug without prescription prohibited; penalty; exceptions.

1. A person who furnishes any dangerous drug except upon the prescription of a practitioner is guilty of a category D felony and shall be punished as provided in NRS 193.130, unless the dangerous drug was obtained originally by a legal prescription.

2. The provisions of this section do not apply to the furnishing of any dangerous drug by [illegible]



5. A pharmacy in a correctional institution or a person designated by the director of the department of prisons to administer a lethal injection to a person who has been sentenced to death.

Executions

In the case of a female prisoner [illegible] whom has been imposed the judgment of death, such person shall be delivered to the warden of the Southern Nevada Women's Correctional Facility and there to be held pending [illegible] appeal. Upon exhausting the appeal process, the female prisoner sentenced to death [illegible] delivered to the Warden of the Nevada State Prison at [illegible] the event of an eleventh hour postponement of execution, said female prisoner shall be returned to the Southern Nevada Women's Correctional Facility, there to be confined pursuant to existing regulations.

Section [illegible]

OVERVIEW OF THE DAY OF EXECUTION

At approximately 10:30 a.m. ([illegible] are approximate and may be adjusted on an "as needed" basis) on the day of the [illegible] sergeant and [redacted] observation officers will report to the condemned [illegible]. They will take [illegible] complete sets of [illegible] clothing which have [illegible] by the sergeant. They will [illegible] unit and proceed to the cell of the condemned inmate. The condemned inmate will not be allowed to bring with him any personal items. All of the inmate's personal property will be [illegible] searched by the sergeant, who will also fill out an inventory sheet, which will be [illegible] by the condemned inmate. His personal property will be [illegible] departmental procedures. He will then be allowed to eat lunch at [illegible] [redacted]. After being positively [illegible], the condemned inmate will then be [illegible] the unit [illegible] which he will be [illegible] searched. He will then put on one set of [illegible] clothing consisting of a pair of [illegible] socks, underwear and [illegible] shoes. The inmate will be [illegible] and wrist restraints [illegible] to the [illegible] cell area by the [redacted] observation officers. Direct sight [illegible] will be maintained by the officers of the [illegible] be is moved into [illegible] cell. The [illegible] of clothing will be placed in the [illegible] cell area.

Should the inmate [illegible] and/or TV [illegible] will not be allowed [illegible] will be in the [illegible] of the [illegible] (one of the [illegible]). [illegible] he will again be [illegible] identified by [illegible] Warden of Operations.

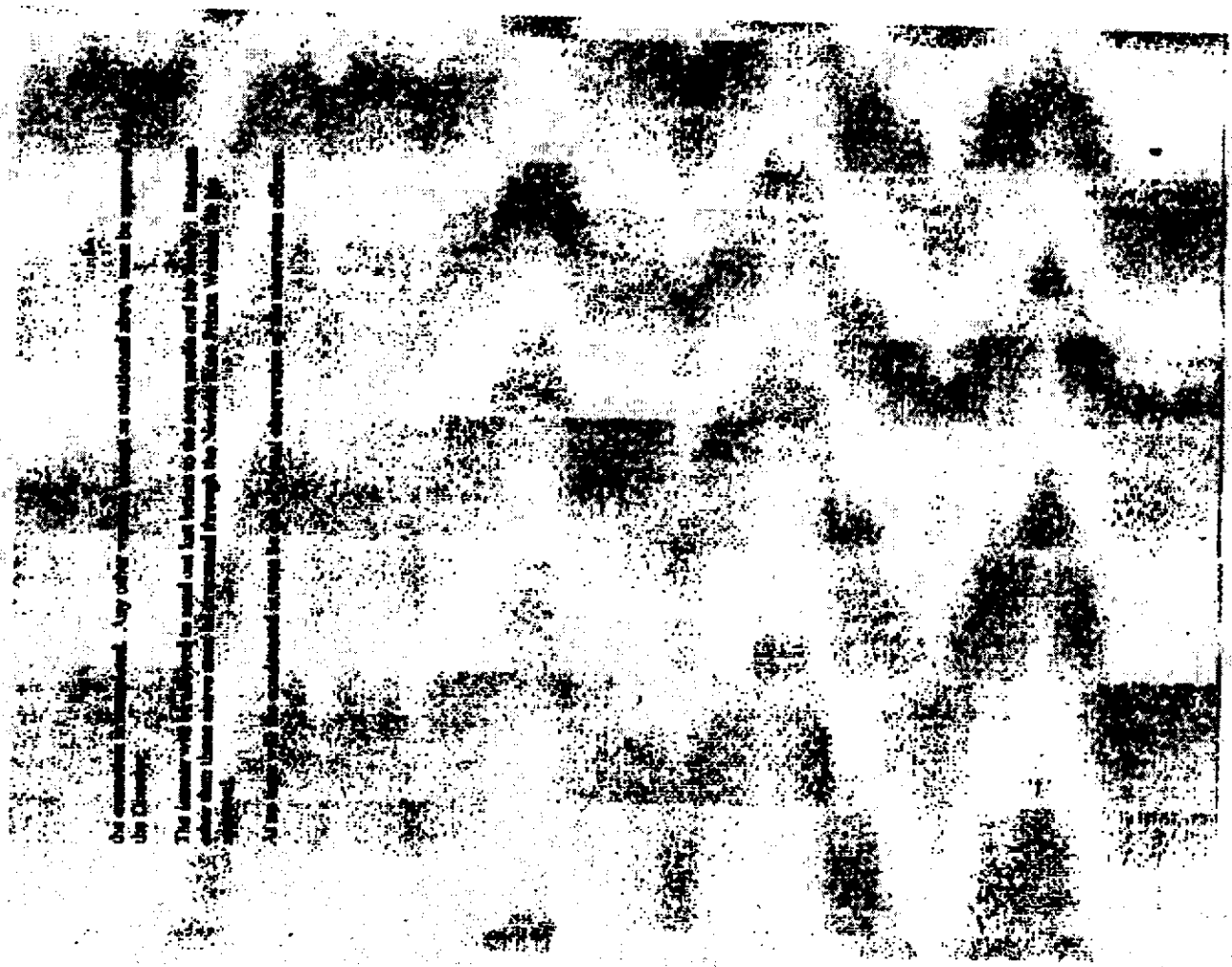
The inmate will be [illegible] his dinner [illegible] [redacted] will also be asked [illegible] Institutional Chaplain [illegible] day before the [illegible] and the day of the [illegible].

At approximately [illegible] – 4:30 [illegible] Culinary [illegible] State Prison [illegible] [redacted] The [illegible]

[redacted]

Note: [illegible] more than [illegible] scheduled [illegible] on the [illegible] [redacted] [illegible] will be [illegible]

[illegible] the [illegible] the time [illegible], the inmate may receive [illegible] and the [illegible]. The [illegible] officers [illegible]



Section [illegible]

LIST OF NEEDED EQUIPMENT AND MATERIALS (MAY VARY)

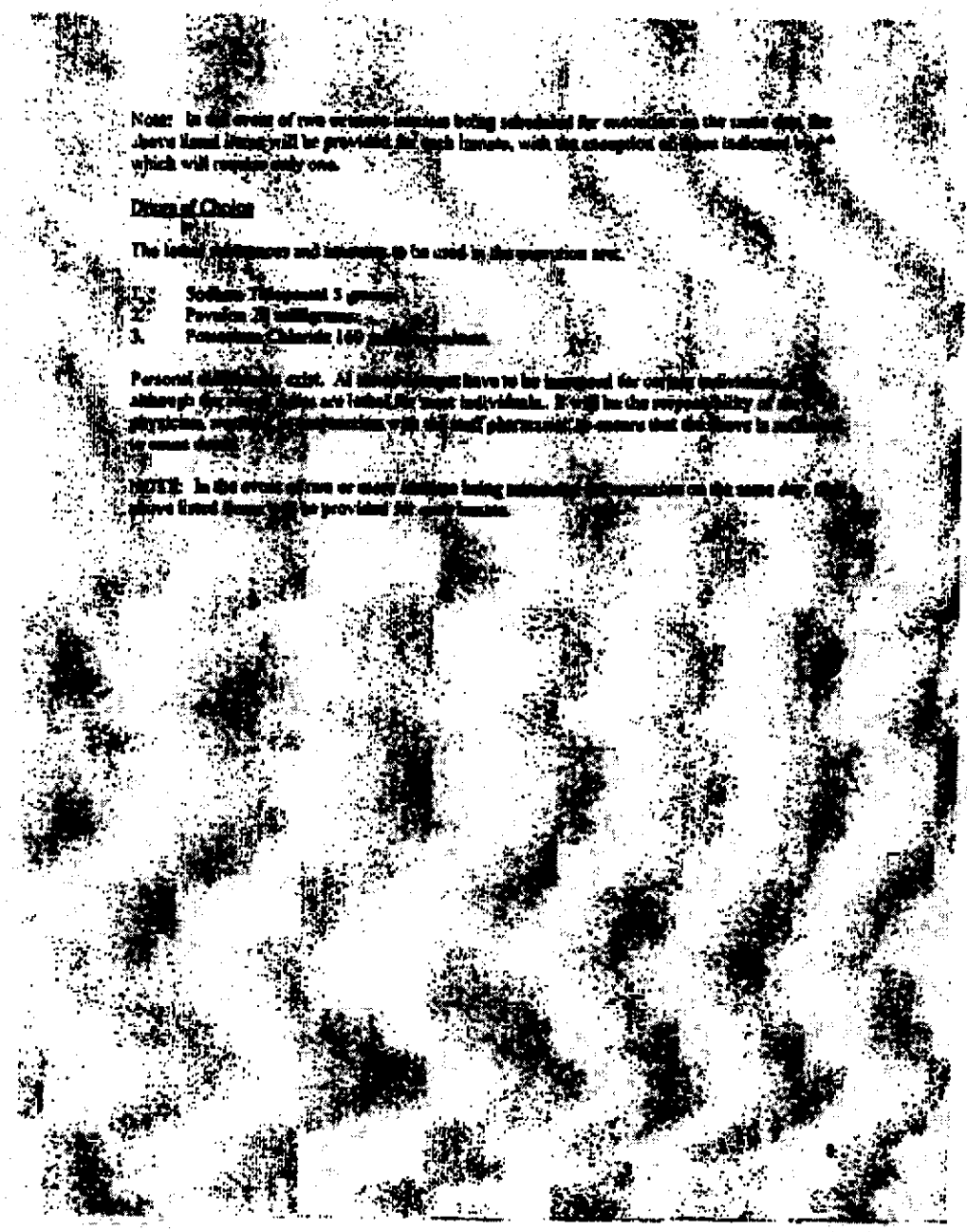
1. Portable stretcher, equipped with restraining straps, one blanket and [illegible]
2. Cardiac monitor.
3. One stop watch, one [illegible] pair surgical gloves, and one pocket [illegible]
4. Two medium straight [illegible]
5. Two tourniquets, adhesive tape, [illegible] narrow and wide, one [illegible], several [illegible], alcohol, sponges, and tongue depressors.
6. Two intravenous fluids (500 ml each) [illegible] saline.
7. Three 10 ml syringes containing the necessary amount of Pavulon, clearly marked.
8. Th[illegible] syringes containing the necessary amount of [illegible], clearly [illegible]
9. Tw[illegible] syringes containing [illegible] Chloride, [illegible]
10. Six 10 cc [illegible] Sodium Chloride for [illegible] drugs.
11. Two 18-gauge [illegible] needles, 1 ½" [illegible]
12. Two [illegible] with "Y" [illegible]
13. Two extension sets.
14. Five 60 cc syringes [illegible].
15. Two 3 cc syringes [illegible] ½" needles [illegible]

[illegible] Two injection [illegible]

[illegible] 18 gauge 1 ½" [illegible]

[illegible]

19. Four [illegible] 10 mg. of Valium [illegible]
20. Blood [illegible]



Note: In the event of two or more inmates being scheduled for execution on the same day, the above listed items will be provided for each inmate, with the exception of those indicated by **, which will require only one.

Drugs of Choice

The lethal chemicals and injections to be used in the execution are:

1. Sodium Thiopental 5 grams
2. Pavulon 20 milligrams
3. Potassium Chloride 160 milliequivalents

Personal [illegible] exist. All [illegible] must be transported for certain individuals although the [illegible] are listed for most individuals. It will be the responsibility of the physician, [illegible] to coordinate with the local pharmacist to ensure that the above is available for the assist team.

NOTE: In the event eleven or more inmates being scheduled for execution on the same day, the above listed items will be provided for each inmate.

[illegible] IV.

EXECUTION PROCEDURES

The drugs shall be administered individually by syringe into a "Y" injection site of the intravenous tubing. The order of injection shall be first – Sodium Thiopental, second – Pavulon, and third – Potassium Chloride.

Approximately four hours, but no later than one hour, before the execution is scheduled to take place, the condemned inmate will be offered pre-medication. In the event of two or more inmates being scheduled for execution on the same day, both inmates will be offered pre-medication at the same time.

The pre-medication may be administered either orally or by intramuscular injection by the medical services personnel. The [illegible] dosage of the [illegible] medication [illegible] is to be determined by the physician.

Approximately one hour prior to the time of execution, a [illegible] security [illegible] the observation [illegible] commander and [illegible] officers.

After the [illegible] injection [illegible] has been administered, the condemned [illegible] will be escorted into the area of the [illegible] chamber by [illegible] and one [illegible]. The condemned inmate will [illegible] on the table and [illegible] will be [illegible]. The [illegible] [illegible] will have been [illegible] in the inmate [illegible] the [illegible]. [illegible]

[illegible] venipuncture [illegible] by the [illegible]. The [illegible] is then affixed [illegible] [illegible] the [illegible] [illegible]. If [illegible] to find [illegible] vein of the [illegible] [illegible] and [illegible] [illegible]. The [illegible] [illegible]

The [illegible] be [illegible] into both [illegible] to keep [illegible] clear.

At the order of the Director to proceed, [illegible] will be administered [illegible]. The condemned [illegible] a deep [illegible] a matter of [illegible] seconds and [illegible] soon thereafter.

Once the [illegible], the [illegible] physician and coroner [illegible] whether it [illegible]

medication is determined to be insufficient to cause death, the second dose of medication shall be infused in the other arm of the condemned inmate.

Once the death pronouncement has been made, the shades will once again be drawn on the execution chamber and the needles shall be removed from the subject's arm. All unused solutions are to be handled in a most careful manner and returned to the Pharmacy to be inventoried and disposed of in an appropriate manner. The disposition of all solutions will be recorded as to how much was used, and how much was discarded.

NOTE: A physician [illegible] the condemned inmate one day prior to the scheduled execution to determine if it might be necessary to utilize a vein in the leg for the venipuncture, or if [illegible] indications [illegible] procedures may be necessary.

Section [illegible]

WITNESS PROCEDURE

Nevada law requires there be at least six, but no more than nine, witnesses to attend an execution. The Director must approve all witnesses and/or other persons to be present.

NOTE: Instead of being on-call, a deputy from the Attorney General's office will be present at Nevada State Prison from [illegible] p.m. until the execution is over. [illegible]

The witnesses will arrive at the institution approximately one hour prior to the execution and be escorted to the Visiting Room. Each witness will be given an I.D. card.

Approximately [illegible] minutes before the scheduled execution time the Associate Warden of Programs will escort the witnesses to the execution chamber via the Unit 3 [illegible] entrance. When the group reaches the [illegible] of the stairs the witness group will proceed into Unit [illegible], up the stairs and into the [illegible] room. The witnesses will not be allowed to take any cameras, recording devices, or any personal items into the witness room.

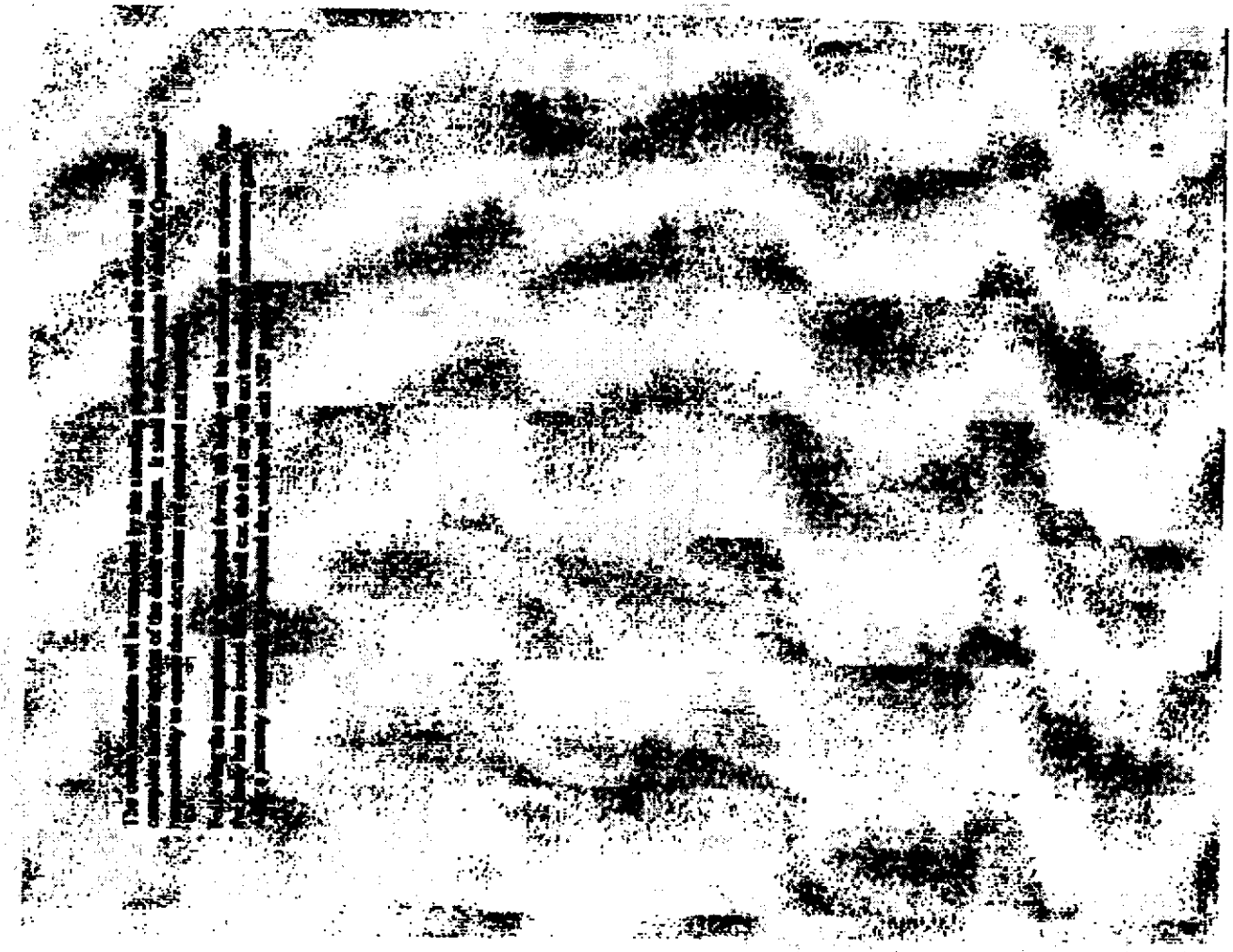
None of the personnel involved in the execution will be in sight, and all blinds in the chamber will be closed. When [illegible] the witness [illegible] the AWP will notify the [illegible] in the Control Room. The [illegible] then [illegible] the media [illegible] to the [illegible] the [illegible] route with the AWP. The [illegible] to the [illegible] room [illegible] and [illegible] it. The [illegible] will [illegible] and the [illegible] will [illegible] chamber [illegible].

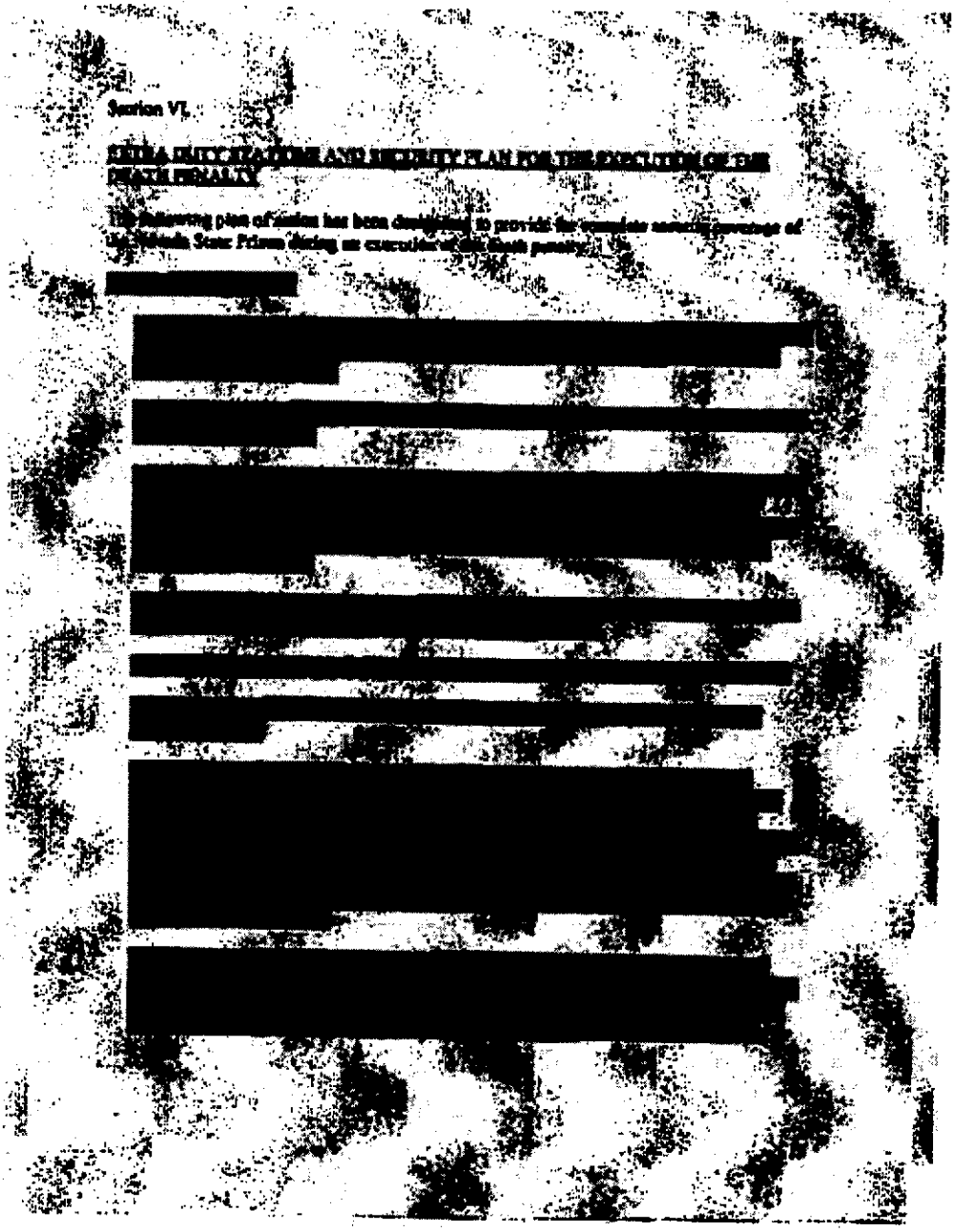
[redacted]
[illegible] will be [illegible] the [illegible] execution [illegible]. When the physician and coroner have [illegible] the [illegible] will be [illegible].

The media witnesses will then be escorted out of the chamber and out of the institution. The official witnesses will then complete the affidavits provided by the AWP. Following completion of those affidavits the AWP will [illegible] the witnesses out of the institution.

NOTE: In the [illegible] or [illegible] are [illegible] the execution on the same day, the witnesses will be returned to the Visiting Room [illegible] will be escorted back to the execution chamber [illegible] the [illegible]. Members of the [illegible] will be allowed to call NSP [illegible] outside [illegible] if [illegible]. They will then be escorted back to the execution chamber by the PIO [illegible] above.

The Associate Warden of Operations will be provided with a [illegible] that will be completed [illegible] the [illegible] execute [illegible] the [illegible].

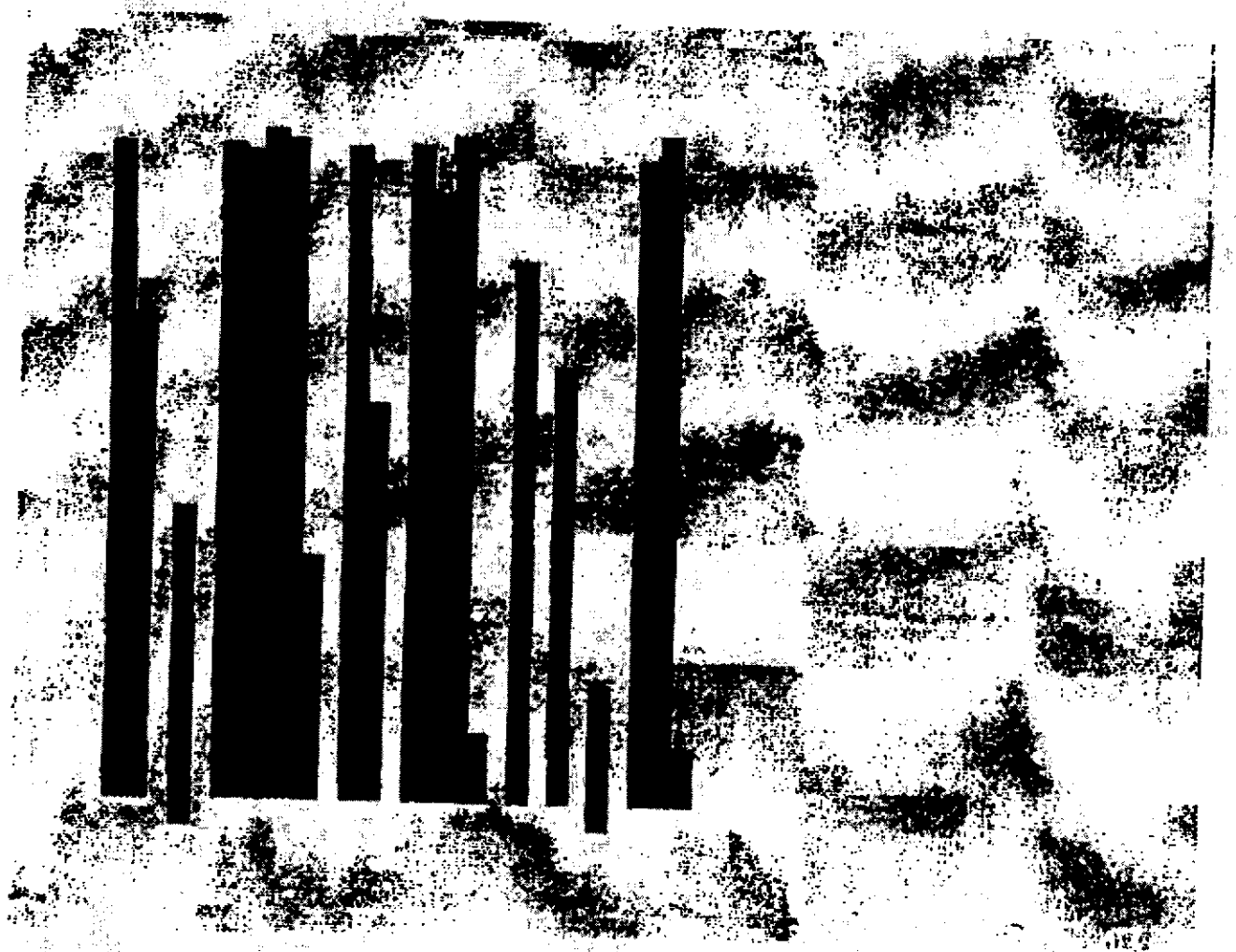


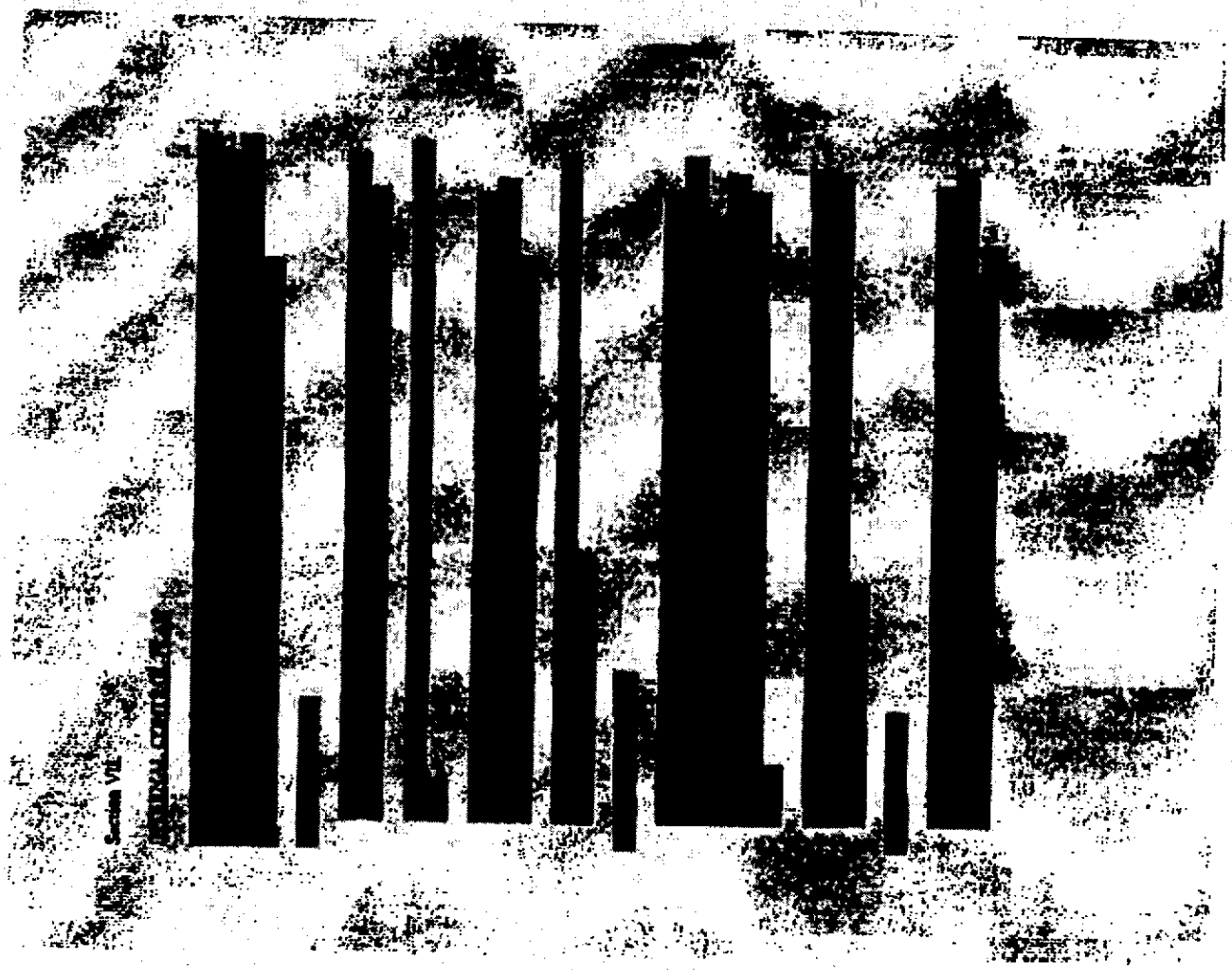


Section VI.

[redacted]

[redacted]





Section VIII-[illegible]

POST-EXECUTION PROCEDURES

[redacted]

Immediately following the execution of the death penalty, the body shall be removed and released over to the attending mortician, following the procedures for the death of an inmate.

NOTE: In the event two or more executions are scheduled for the same day, separate vehicles as outlined above will be required for each inmate.

All disposable equipment, including needles, tubing, etc., will be turned over to the prison pharmacy for proper disposal within one working day. If unavailable, then they will be secured in the NSP pharmacy until the next business day.

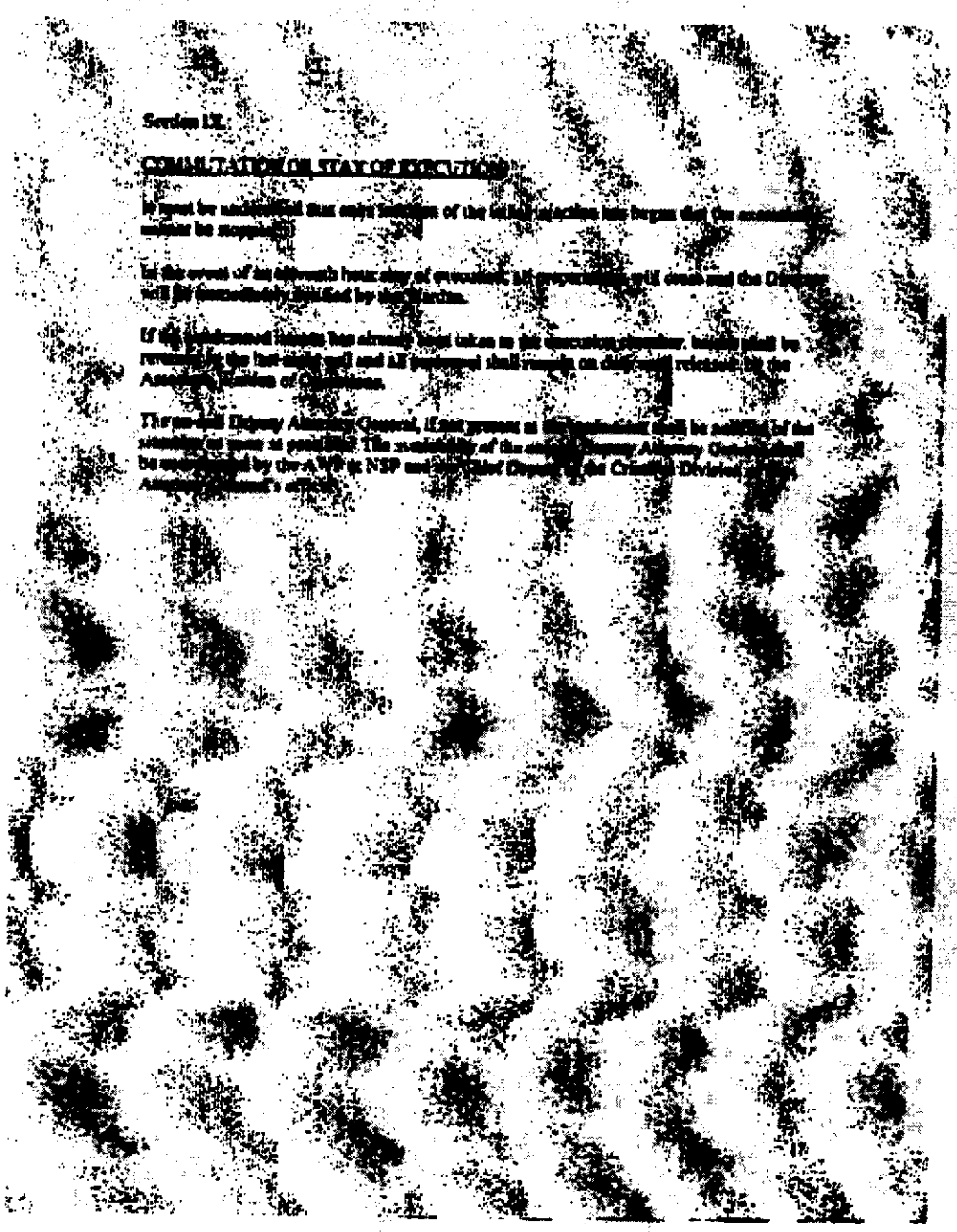
Unused solutions or drugs will be turned over to the prison pharmacist for proper handling within one working day. If unavailable, they will be secured in the NSP pharmacy until the next business day.

The disposition of all solutions is to be recorded as to the amounts used and amounts disposed. The [illegible] solutions [illegible] will be [illegible] by [illegible] and the [illegible] they were opened [illegible] be recorded [illegible].

The [illegible] team will [illegible] the [illegible].

All staff directly involved in the execution [illegible] the Conference with [illegible] clergy members, at which time a debriefing [illegible] will be provided.

It shall be the responsibility of the Associate Warden of Operations to ensure that the officers on [illegible] and the debriefing will be [illegible].



Section 12.

CONSULTATION OR STAY OF EXECUTION

It must be established that some member of the initial [illegible] has begun that the execution order be suspended.

In the event of an eleventh hour stay of execution all preparations will cease and the Director will be immediately notified by the Director.

If the condemned inmate has already been taken to the execution chamber, he/she shall be returned to the [illegible] cell and all personnel shall remain on duty and [illegible] the Associate Director of Operations.

The [illegible] Deputy Attorney General, if not present at the execution shall be notified of the [illegible] of time as possible. The availability of the [illegible] Deputy Attorney General shall be established by the AWP in NSP and the Chief Deputy of the Criminal Division [illegible] Attorney General's office.

Section X

SAMPLE SELF-EXPLANATORY FORMS USED DURING THE EXECUTION PROCESS

A. Execution Checklist

B. Execution Position Assignments

C. Affidavit

D. LEE Department Identification Form

E. Notice of Agreement – Medical Services

F. Telephone Logs

G. Media [illegible]

H. Request and Notification of Execution, Public Information Event Checklist

I. Media [illegible]

NTDA-00004661

EXECUTION CHECKLIST

DATE/TIME **INITIALS**

[illegible] prior to execution [illegible]

1. ______ Establish service [illegible] with Paramedics. Normally use Carson City Fire Department. ______ AWO

2. ______ Telephone notification to Sheriff's Office and Coroner's Office of pending execution. ______ AWO

3. ______ Telephone notification to Funeral Home of pending execution. ______ AWO

4. ______ Staff assignment and [illegible] planning. ______ AWO

5. ______ Contact Copy of the Judgment of Death [illegible] ______ AWO

6. ______ Photograph [illegible] upon arrival to Nevada State Prison. ______ AWO

[illegible]

7. ______ [illegible] to local execution. ______ AWO

8. ______ Make arrangements for equipment and drugs from Medical Department. ______ [illegible]

9. ______ Make arrangements for [illegible] for preparation of the Death Certificate, [illegible] and final [illegible] attachments. ______ AWO/DOS [illegible]

10. ______ [illegible] advisor of choice [illegible] ______ AWO

11. ______ Ensure outside [illegible] execution [illegible] operational. ______ [illegible]

EXECUTION CHECKLIST
[illegible]

12. ______ Make arrangements for Registered Nurse to pre-medicate. AW/AO/DONS

13. ______ The condemned inmate will be given a medical exam by a physician. AWO

14. ______ Staff observation and security team rehearsal and [illegible]. AW/AO/[illegible]

15. ______ The Director of Nursing [illegible] (DONS) will ensure the cardiac monitor is in working order. AW/AO/DON

16. ______ Notification to Sheriff and Coroner in [illegible] of execution. [redacted] will be hand-delivered [illegible]. AWO

17. ______ Make necessary maintenance inspection [illegible] the execution chamber, the night cell [illegible]. [illegible]

18. ______ Staff meeting with Warden, AWO, AW[illegible] and PM [illegible]. AWO/[illegible]

19. ______ [illegible] inmate [illegible] a pre-execution form [illegible] any [illegible]. [illegible]

20. ______ Make arrangements for one semi-hut with [illegible] for the parking lot with Facility Manager (FM). [illegible]

31. ______ Notify all outside religious and [illegible] personnel [illegible] for scheduled execution date. [illegible]

One week prior to scheduled execution date.

22. ______ Official [illegible] [redacted] [illegible]

______ [illegible] of any [illegible]. [illegible]

[illegible] Page [illegible]

24. ______ Confidential [illegible] witness list will be prepared and distributed to a restricted list of personnel. ______ [illegible]/AWP

25. ______ All staff involved will be given a detailed briefing on specific duties and responsibilities [illegible] in the NSP Courtroom. ______ W/AWC/AWP

26. ______ Make arrangements for a Deputy Attorney General to report to NSP for execution. ______ AWP

27. ______ A confidential telephone list of [illegible] government officials will be established so that they may be [illegible], i.e., Judge, [illegible] attorney, [illegible] Office and NDOC [illegible] [redacted] ______ W/AWP

28. ______ Memorandum [illegible] to all [illegible] at NSP and WSCC [illegible] [redacted] ______ [illegible]

29. ______ Food [illegible] ______ [illegible]

30. ______ [illegible] for the [illegible] Officers and NDOC [illegible] ______ W

31. ______ [illegible] memorandum detailing press, [illegible] and staff [illegible] will be distributed. ______ AW[illegible]

[illegible]
Page [illegible]

Approximately 48 hours prior to scheduled execution

32. _____ The pharmacist will ensure the [illegible] for the [illegible] for [illegible]. [redacted] — W

33. _____ Telephones in the execution area will be tested. — AWO/PIM

34. _____ Restricted access list to execution chamber. Warden, AWO, and AWP only ones to authorize access to the execution chamber. — W/AWP/AWO

Approximately 24 hours prior to scheduled execution

35. _____ Establish medical aid [illegible] in the Law Library — AWO/DONS

36. _____ A clipboard will be available for official witnesses to sign their affidavits. The Associate Warden of Programs will ensure each official witness signs the affidavit prior to departure. — AWP

37. _____ The cardiac monitor will be moved [illegible] to the Death Chamber and checked for [illegible] readiness. — DON/[illegible]

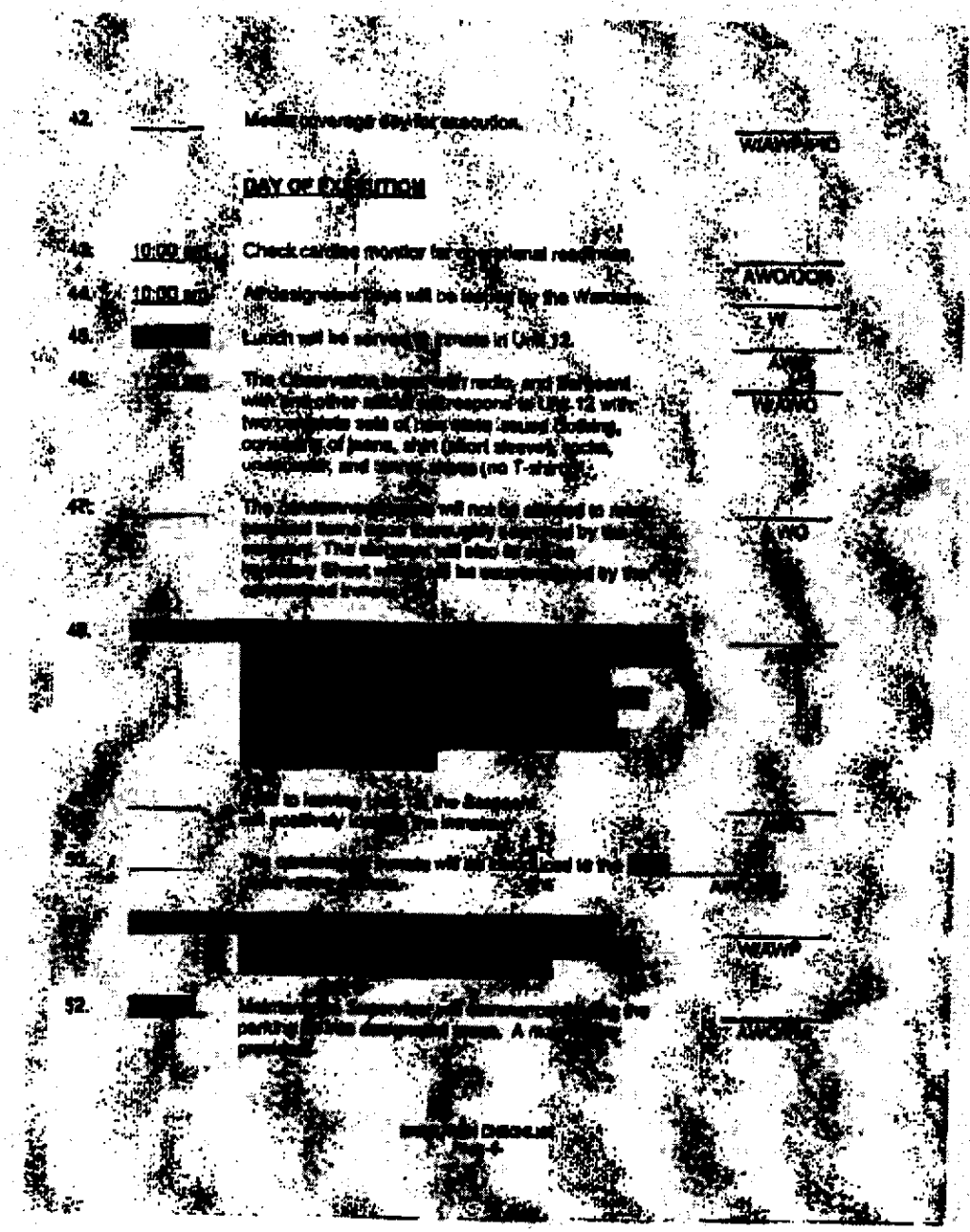
38. _____ The Department Chaplain and a NDOC staff psychologist will be assigned to [illegible]. — AWP

39. _____ List of official witnesses and media witnesses, approved by the Director, will be maintained (not to exceed 9 official and 10 media witnesses). — AWP/PIO

40. _____ The [illegible] phone number will be [illegible] at 7:00 a.m. the day of the execution for calls concerning the execution. — AWP

41. _____ All [illegible] calls will be answered by individuals [illegible] the [illegible] phone. Once execution is complete, [illegible] log records will be turned into the Warden. — AWP/W

[illegible] CHECKLIST



42. [redacted] Media coverage day/live execution. WIA/WPIO

DAY OF EXECUTION

43. 10:00 am Check cardiac monitor for operational readiness.

44. 10:00 am Aide-designated cops will be relieved by the Warden. AWO/DCS

45. [redacted] Lunch will be served to inmates in Unit 12. 2 W

46. 1:00 pm The Chaplain, [redacted] radio, and staff assist with telephone will correspond to Unit 12 with [redacted] AWO

47. [redacted] WO

48. [redacted]

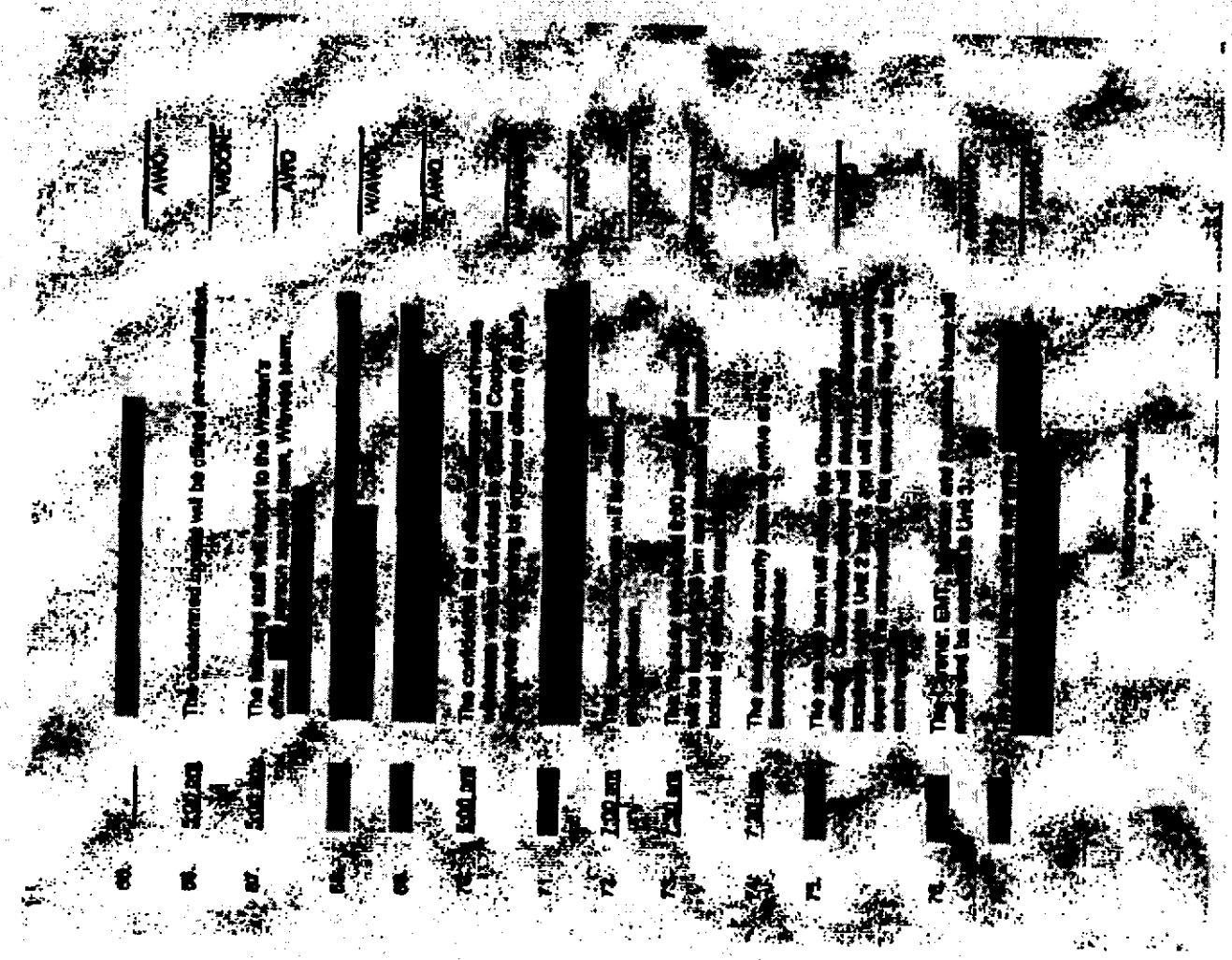
49. [redacted]

50. [redacted]

51. [redacted] WIA/WPIO

52. [redacted]

[illegible]		One custody officer from will be assigned to the parking lot to ensure people park in designated areas as assigned.	W
5[illegible]	2:00 pm	The condemned inmate will be informed that dinner will be at approximately [redacted]	AWP
[illegible]		The condemned inmate will be asked if he/she would like to visit with his/her spiritual advisor or the department Chaplain.	W/AWP
[illegible]		The condemned inmate will be allowed to write [illegible] final letters and make phone calls to immediate family and attorney of record, spiritual advisor.	W/AWP
[illegible]	2:30 pm	The Warden and Associate Warden will verify identity of inmate.	W/AWP
58.	3:00 pm	The [redacted] and the [redacted] [illegible] [redacted] last meal [illegible] [redacted] and [redacted] will [illegible] to the condemned inmate at approximately [redacted]	AWO
[illegible]		Following completion of dinner, [illegible] the condemned inmate may receive visits [illegible] spiritual advisor, the Chaplain and the Warden [illegible] exceptions must be approved by the Director [illegible]	
[illegible]	[redacted]	The [illegible] Control Team [illegible] position as follows:	AWO
61.		[redacted]	AWO
62.		[redacted]	AWO
[illegible]		[redacted]	AWO
64.		[redacted]	AWO



78. 8:00 pm The official witnesses will arrive at the institution. Their identity will be verified by the Officer at the Bottom of One Tower. They will be issued a witness pass. They will then be escorted to the Visiting Room. The AWP will brief the official witnesses on the protocol for the execution. AWP/PIO

79. 8:07 pm AWO conducts [illegible] test on emergency outside phone line in last night [illegible] AWO

80. 8:10 pm The [illegible], and coroner will be given a briefing [illegible] events of the execution. AWP

81. 8:15 pm The media witnesses will arrive at NSP. Their identity will be verified by [illegible] One Tower [illegible] staff and they will be issued a media pass. [illegible] or [illegible] equipment will be [illegible]. They will be escorted [illegible] by the PIO. The [illegible] will brief the official witnesses on the protocol [illegible] AWP/PIO

82. 8:35 pm The media [illegible] from the [illegible] Public Information Officer [illegible] and [illegible] to the [illegible] area. AWP/PIO

83. 8:38 pm The Warden [illegible] remove [illegible] from the [illegible]. W

84. 8:40 pm The condemned inmate will be [illegible] leg and handcuff [illegible] by the security [illegible] AWO

85. 8:45 pm The Associate Warden [illegible] officer will escort the official witnesses from the Visiting Room to the execution chamber [illegible] room. The NDOC Victims' Advocate and [illegible] officer will escort the victims to the [illegible] witness area. [illegible]

86. [illegible] The condemned inmate will be escorted from the Last Night Cell to the Chamber by the security team, placed on the table, and put into soft restraints. Lead officer of the security team will re-check all restraints on the inmate. [illegible] | W

87. [illegible] The contracted emergency medical services technician will be [illegible] by [illegible] Team Supervisor. | AWO

88. [illegible] [illegible] | AWO

89. [illegible] The Director will give the order to proceed with the execution to the warden. The Warden will give the Verbal Instruction. The lethal medication will be administered [illegible]:

[illegible]

[illegible]

[illegible]

The attending physician will then [illegible] that the [illegible] were sufficient to cause death. [illegible] line [illegible] LV. [illegible] | W

[illegible]

[illegible] When the condemned inmate is pronounced dead [illegible] the Security Team Commander will [illegible] | W

91. [illegible] After the [illegible] closed, the [illegible] witnesses will be escorted out of the execution [illegible] | AWP/Victims' Advocate

Execution Checklist
[illegible]

92. ______ Secondly, the media witnesses will be escorted out of the institution. ______ PIO/AWP

93. ______ The Associate Warden of Programs will ensure that all the official witnesses complete affidavits prior to exiting the witness area. Upon completion, they will be escorted from the viewing area and out of the institution. ______ AWP

94. ______ After all official and media witnesses have exited the chamber area, funeral home staff will proceed from their vehicle [redacted] to the execution chamber with the portable gurney, equipment with restraining straps and one blanket. All I.V. lines and electrodes will be removed and right index fingerprint taken before the deceased is moved from the execution chamber. With the assistance of the security staff, the mortuary will remove the deceased from the execution chamber to the funeral home vehicle. ______ [illegible]

95. ______ The Associate Warden of Programs will ensure that a body receipt is [illegible] ______ [illegible]

96. ______ The Warden and Coroner will complete the Death Certificate and Cremation documents. The completed Death Certificate and Cremation documents will be given to the funeral home. Copies of both documents will be retained for the record. ______ W/AW[illegible]

97. ______ All [illegible] will be [illegible] by the [illegible]. Appropriate arrangements will be made to deliver unused [illegible] to the [illegible] as soon as possible by [illegible]. ______ [illegible]

98. ______ Following the [illegible] the [illegible] [redacted] [illegible] ______ AWO

EXECUTION CHECKLIST
Page [illegible]

99. ______ At approximately [illegible] a.m., all official witnesses and media should be out of the institution. ______ AWP/AWO

100. ______ At approximately [illegible] a.m., the Warden, AWO, AWP, and security team will meet with the designated clergy members and staff psychologist in the [illegible] Courtroom for de-briefing. ______ W

101. ______ Assigned [illegible] working the execution will be relieved from duty [illegible] by the Associate Warden of Operations. ______ AWO

102. ______ After the 6:00 a.m. [illegible], the institution will return to [illegible] operation [illegible] if [illegible]. ______ W/AWO

[illegible] ______ [illegible] regarding the disposition of [illegible] property. The Associate Warden of Programs will be responsible for this [illegible]. ______ AWP

[illegible] ______ [illegible] and [illegible] will be retained [illegible] Warden [illegible] ______ [illegible]

10[illegible]. ______ All [illegible], memorandums, [illegible] related to the execution will be [illegible] Warden [illegible] ______ W/AWO

EXECUTION CHECKLIST
Page [illegible]

99. ______ At approximately 9:45 p.m., all official witnesses and media should be out of the institution. ______ AWP/AWO

100. ______ At approximately [illegible] a.m., the Warden, AWO, AWP, and Security [illegible] with the [illegible] clergy members and staff [illegible] in the NSP Courtroom for de-briefing. ______ [illegible]

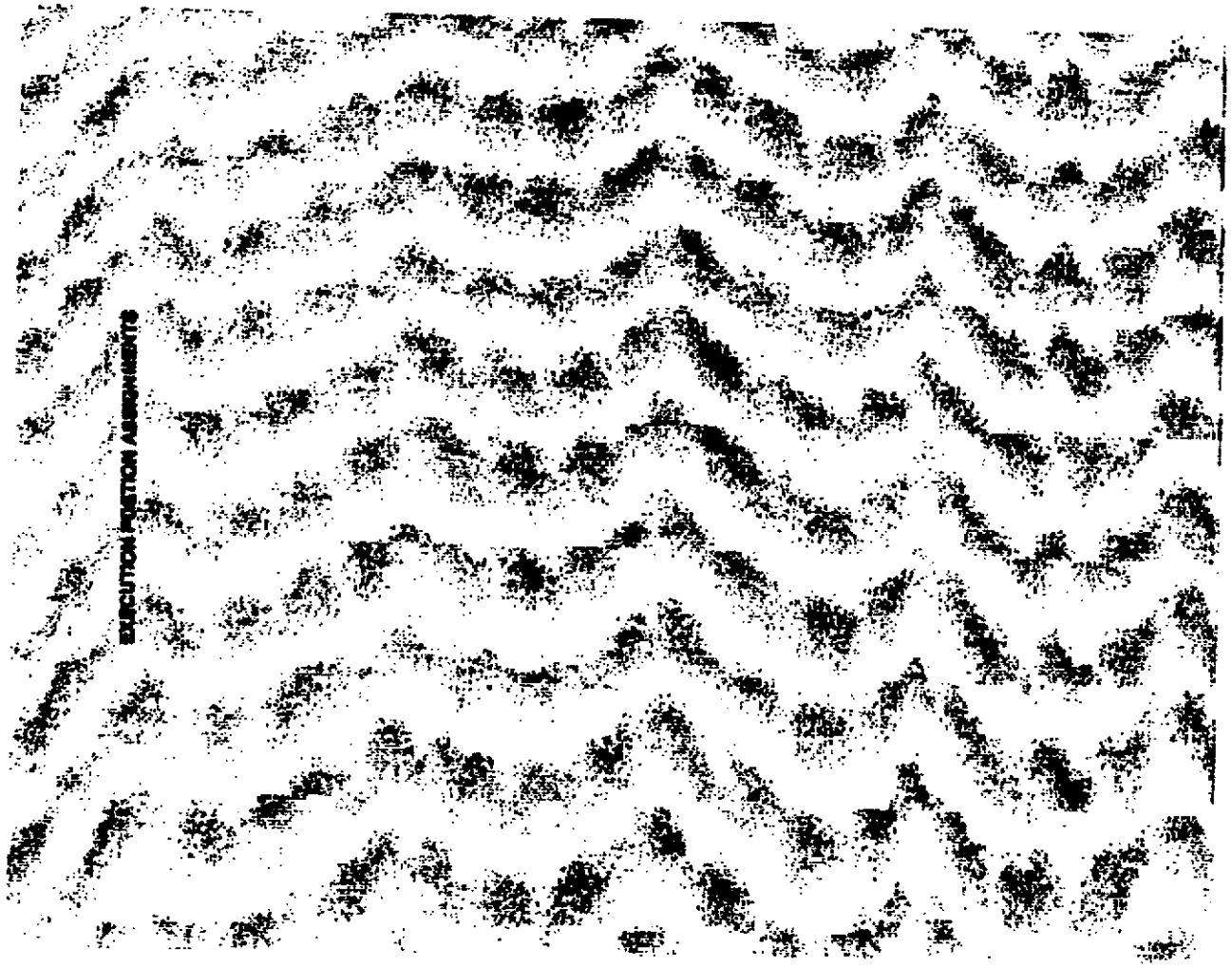
101. ______ Assigned staff working the execution will be released from duty as determined by the Associate Warden of Operations. ______ AWO

102. ______ After the [illegible] a.m. count, the institution will return to normal operation. [illegible] if requested. ______ W/AWO

104. ______ [illegible] will be made regarding the disposition of the [illegible] personal property. The Associate Warden of Programs will be responsible for this [illegible] ______ AWP

105. ______ All [illegible] will be [illegible] in the Warden's [illegible] for [illegible] ______ [illegible]

106. ______ All [illegible] ______ W[illegible]



AFFIDAVIT

We the undersigned, being [illegible] and citizens of the State of Nevada, do by these presents certify [illegible] that each one of us is over the age of twenty-one (21) years; that we were present and in the presence of each other [illegible] the legal execution of [illegible] ____________________

Said execution having been performed at the [illegible], State Prison, Carson City, Nevada, on the ______ day of ______________, 20 ____, between the hours of ________ and ________ of said date; and

That said execution was performed in accordance with [illegible] and [illegible], marked Exhibit "A" and made a part hereof as though set forth in full [illegible].

IN WITNESS WHEREOF, WE HAVE [illegible] OUR NAMES THIS ______ DAY OF ______________ 20____, AT CARSON CITY, NEVADA.

Witness ____________________ Witness Signature ____________________

Residence ____________________

Witness ____________________ Witness Signature ____________________

Residence ____________________

Witness ____________________ Witness Signature ____________________

Residence ____________________

Witness ____________________ Witness Signature ____________________

Residence ____________________

Witness ____________________ Witness Signature ____________________

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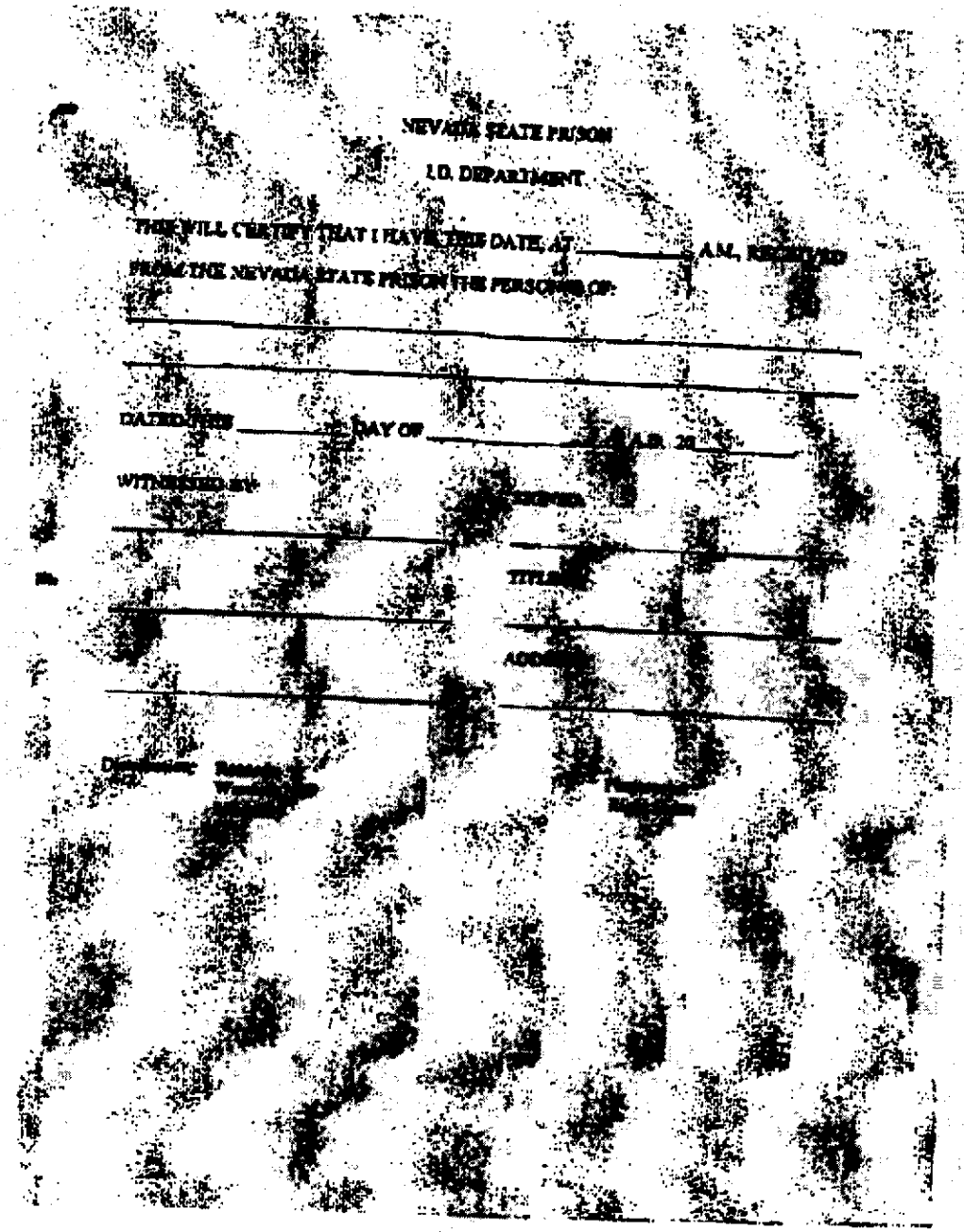
Residence ____________________



NEVADA STATE PRISON

I.D. DEPARTMENT

THIS WILL CERTIFY THAT I HAVE THIS DATE, AT _____ A.M., RECEIVED FROM THE NEVADA STATE PRISON THE PERSONS OF:

DATED THIS _____ DAY OF _____ A.D. 20__.

WITNESSED BY:

SIGNED

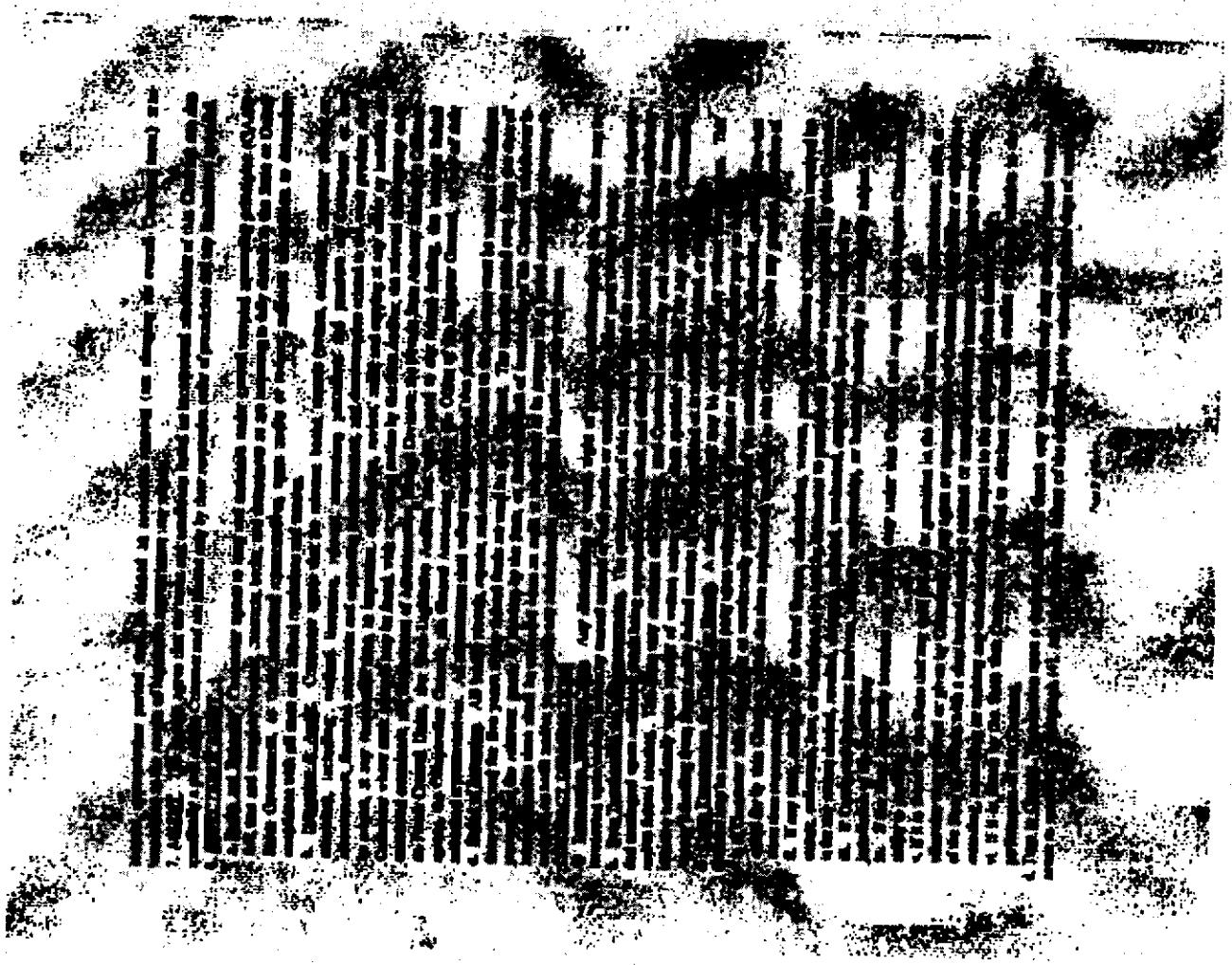
TITLE

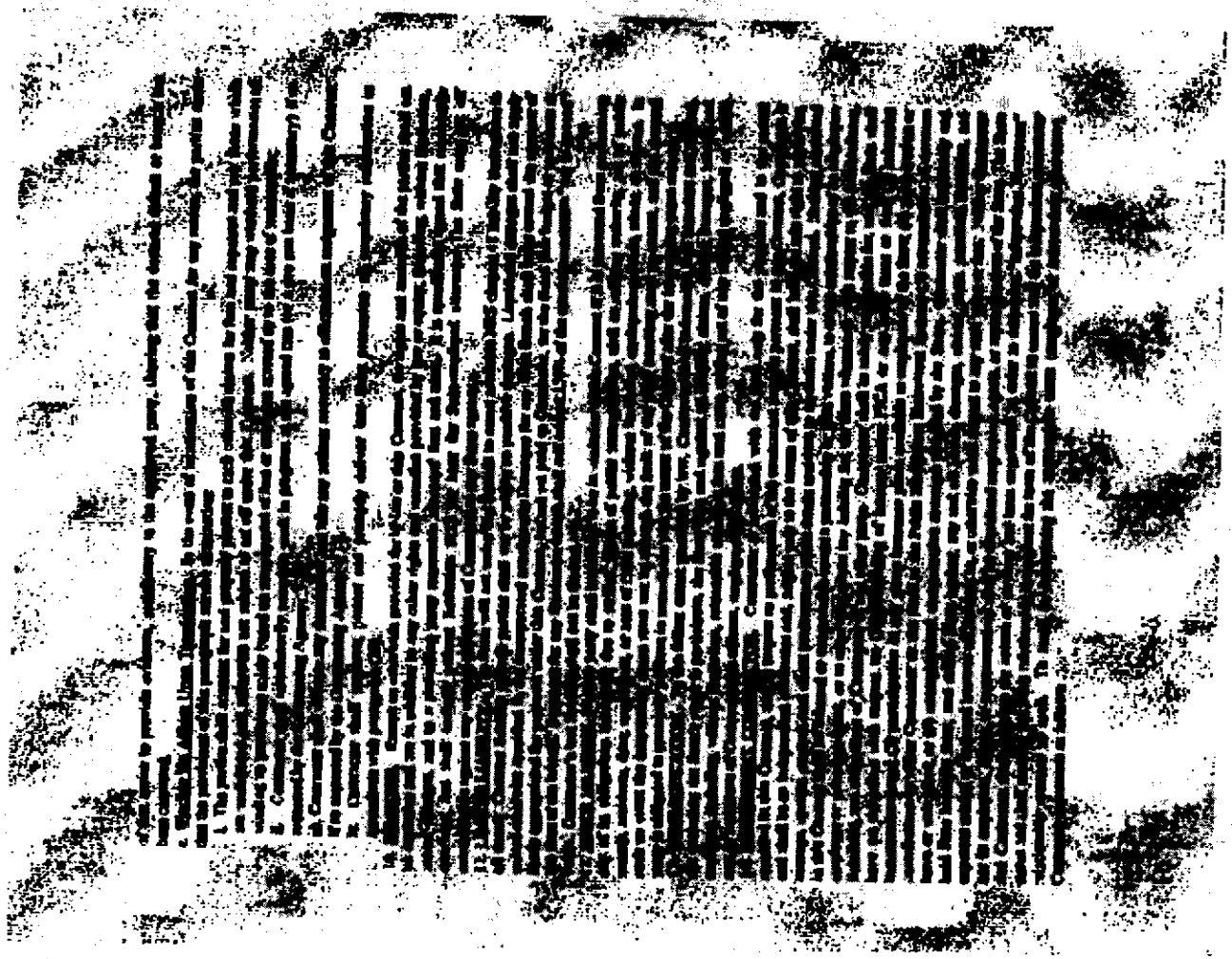
ADDRESS

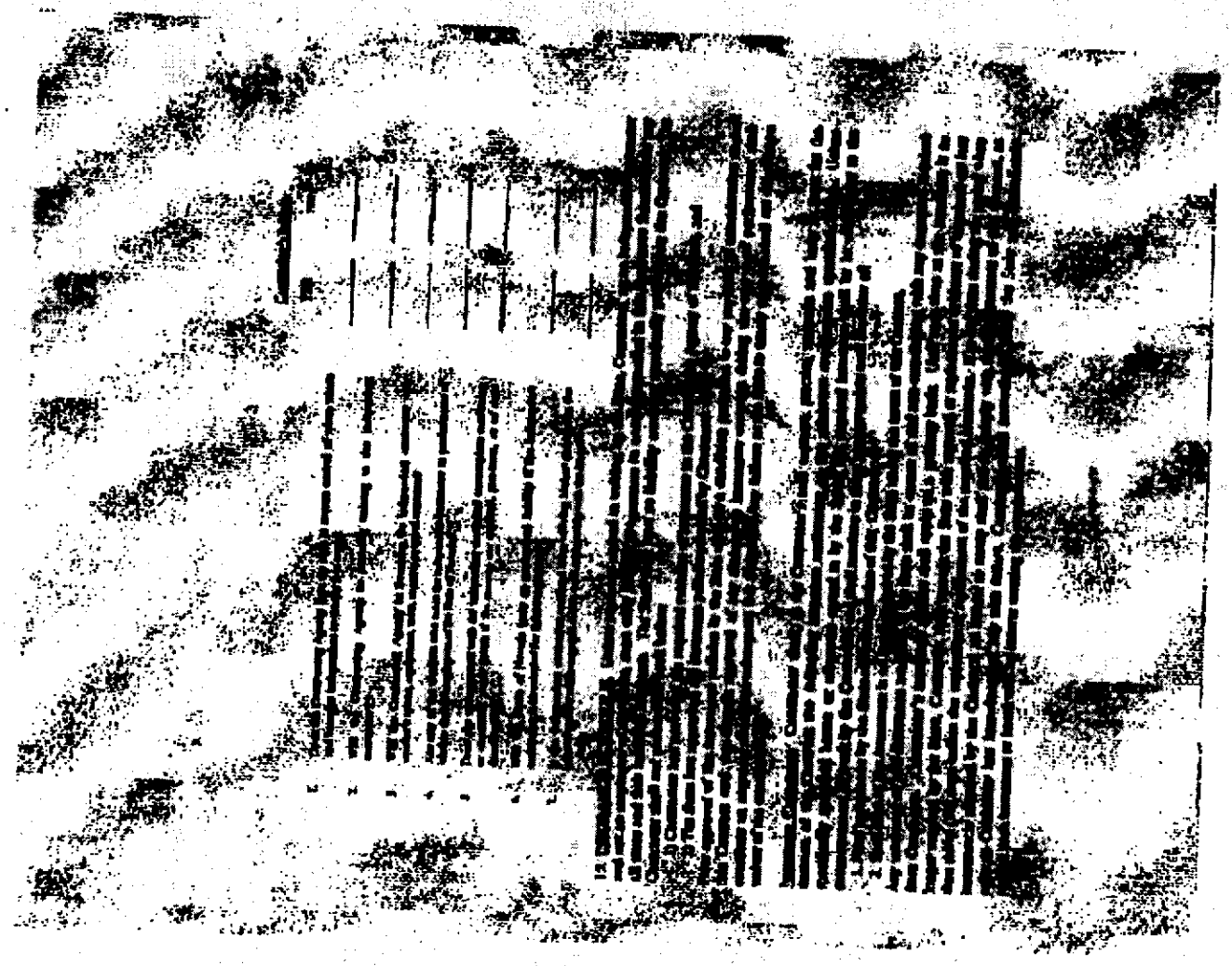
RTDA-0000676

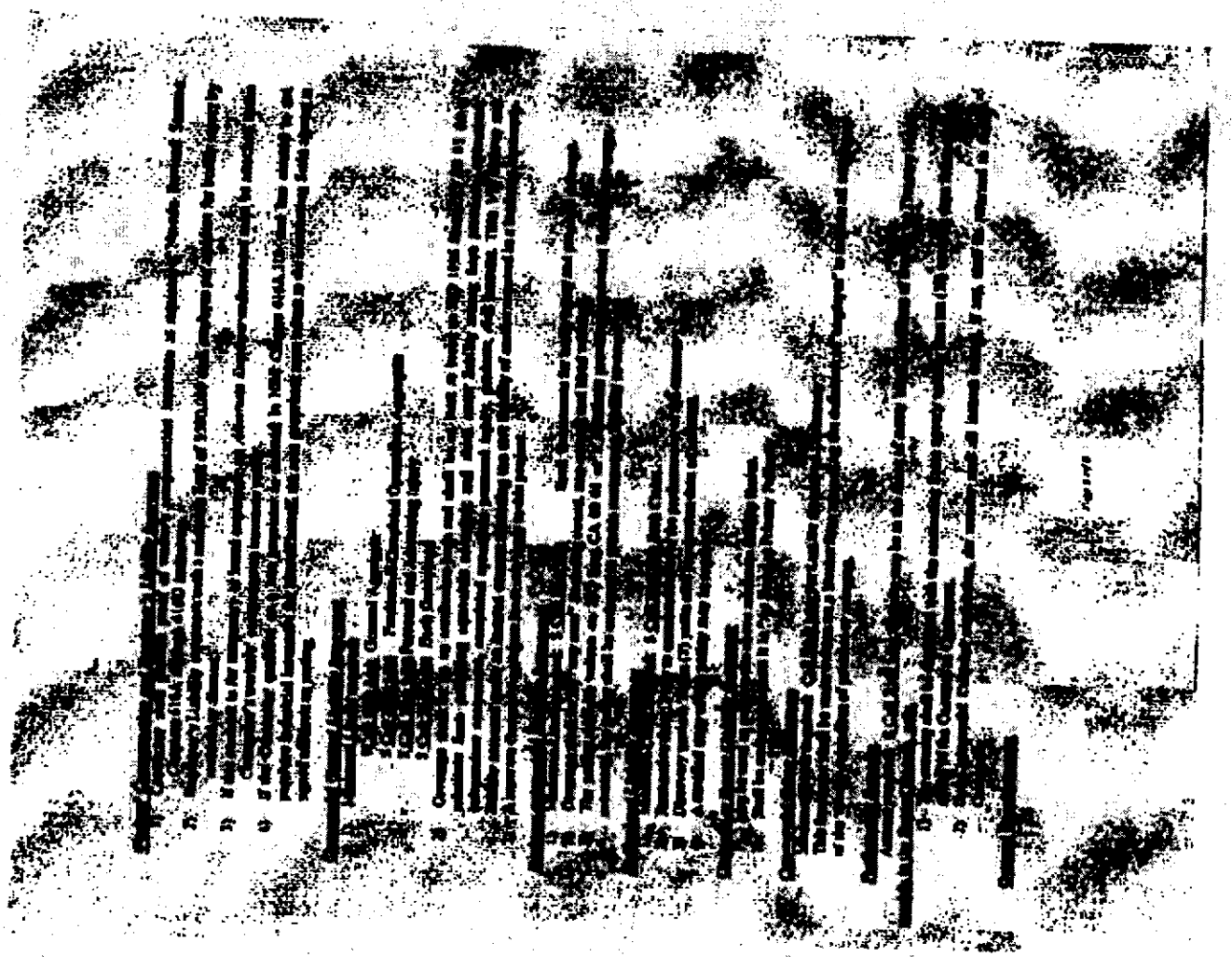
CONTRACT FOR SERVICES OF INDEPENDENT CONTRACTOR

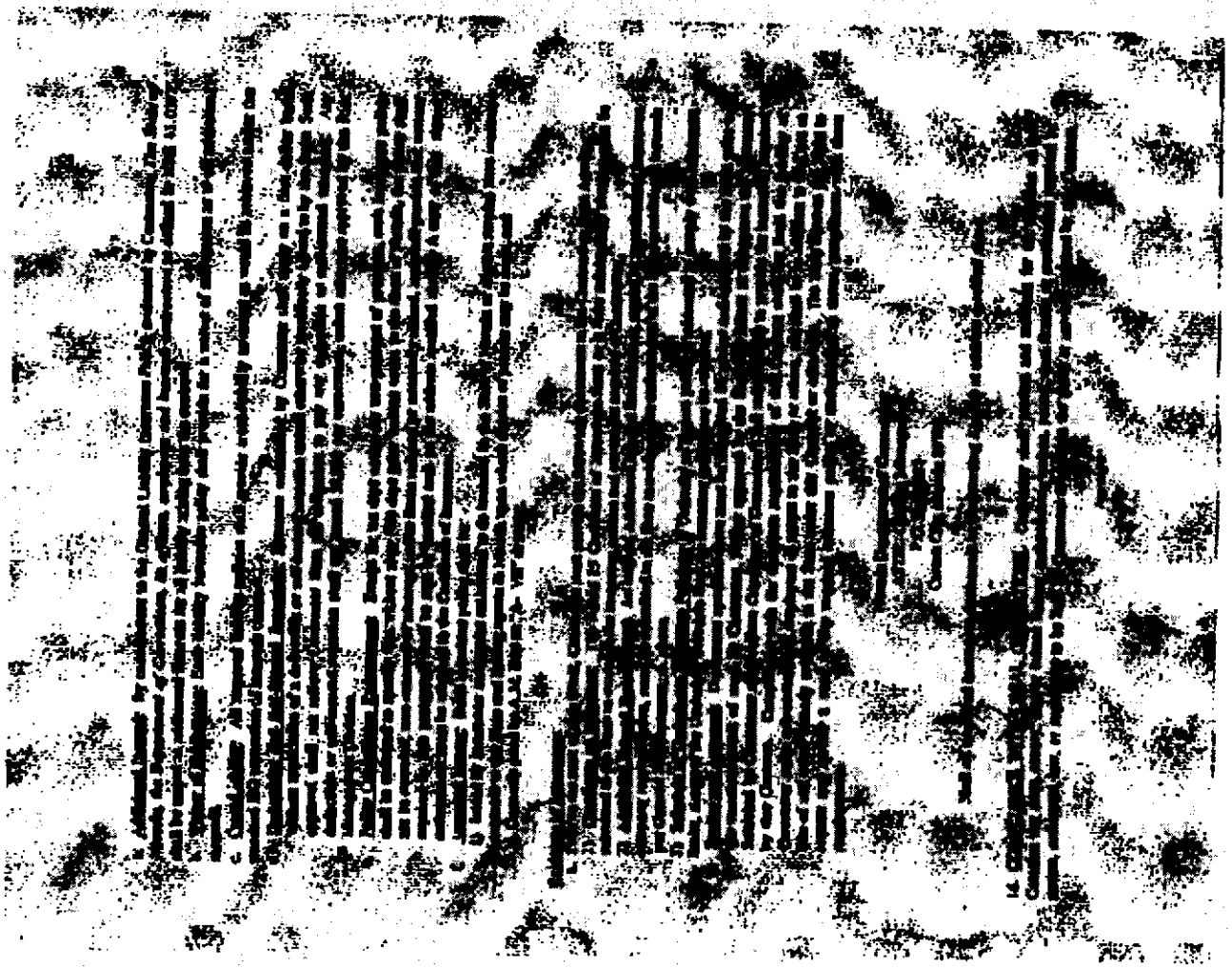
AA002615

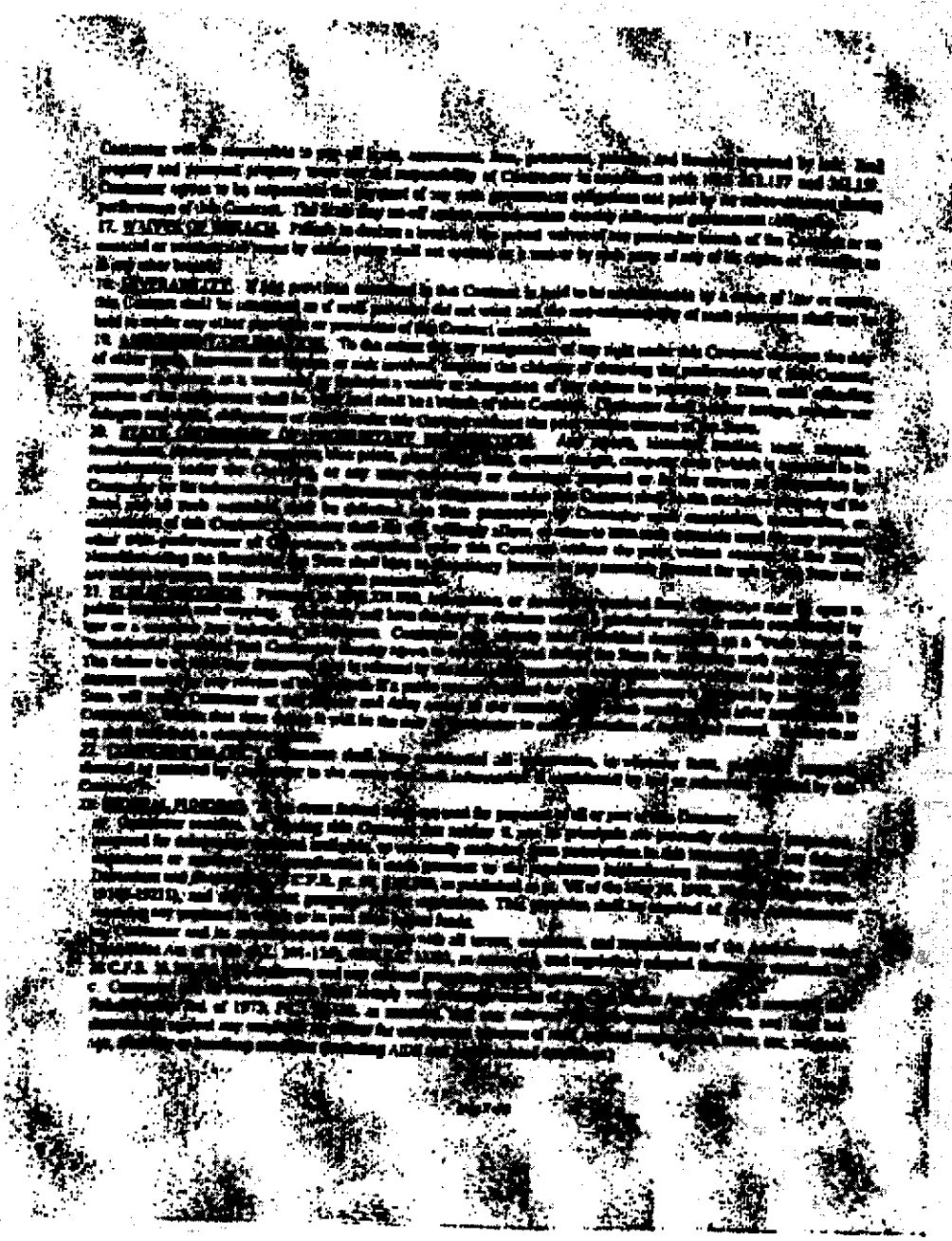


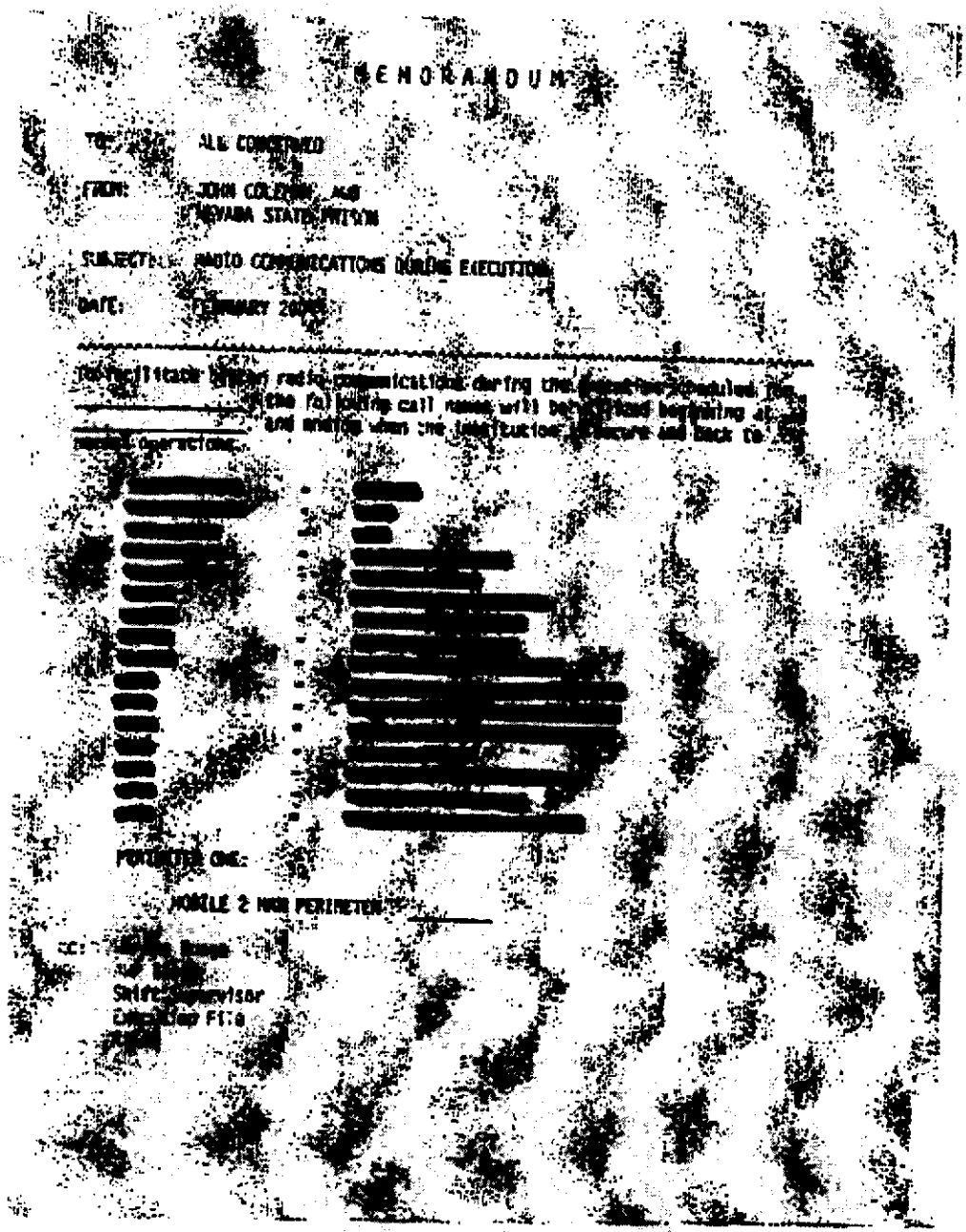












MEMORANDUM

TO: ALL CONCERNED

FROM: JOHN COLEMAN, AGB
NEVADA STATE PRISON

SUBJECT: RADIO COMMUNICATIONS DURING EXECUTION

DATE: FEBRUARY 2000

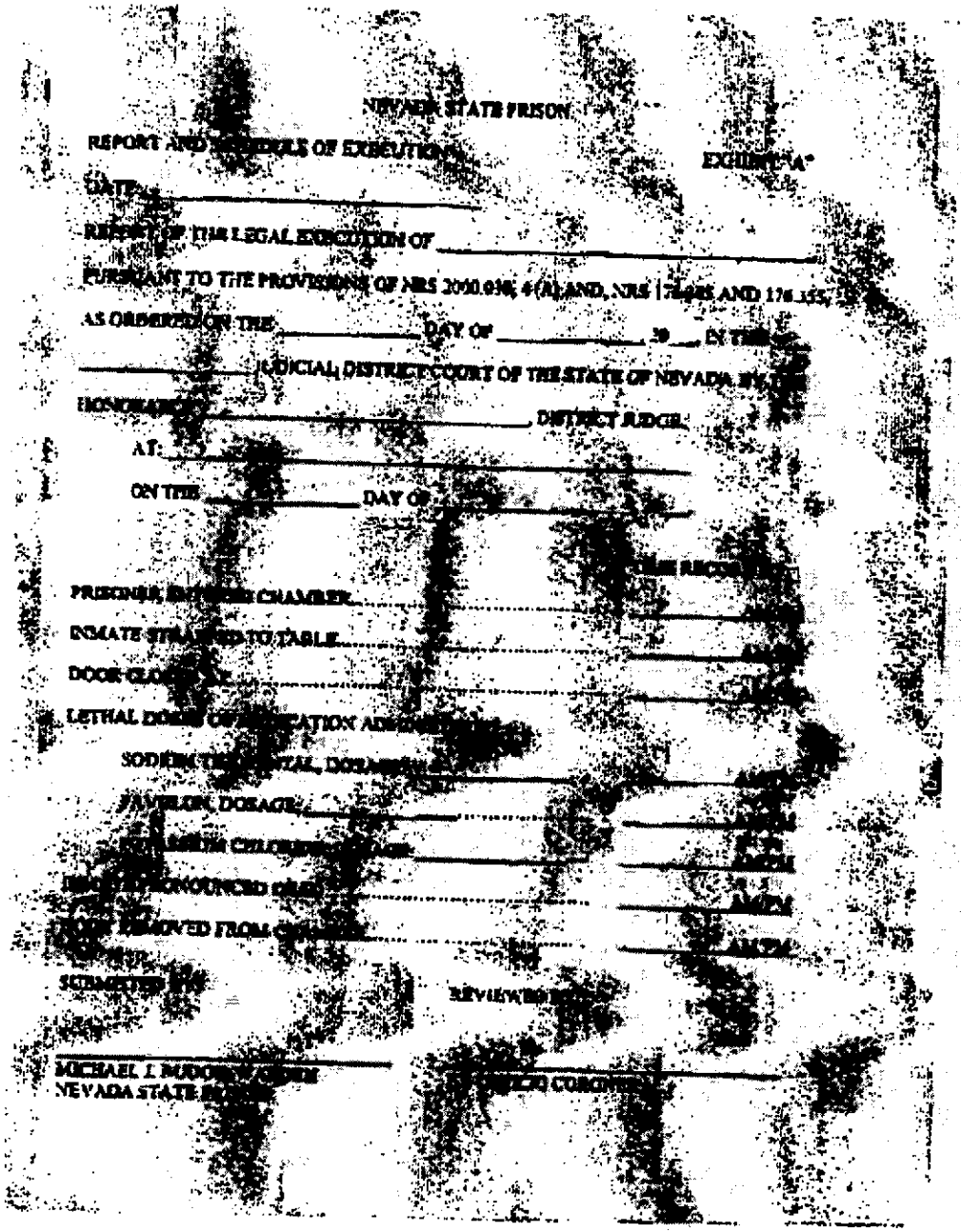
Notification under radio communications during the execution scheduled for the following call names will be utilized beginning at [redacted] and ending when the institution is secure and back to [redacted] operations.

[redacted]

PERIMETER ONE:

MOBILE 2 HAM PERIMETER:

CC: [redacted]
Shift Supervisor
Control Post #1
File



NEVADA STATE PRISON

REPORT AND RECORDS OF EXECUTION

EXHIBIT "A"

DATE:

REPORT OF THE LEGAL EXECUTION OF

PURSUANT TO THE PROVISIONS OF NRS 200.030, 4 (A) AND, NRS 176.355 AND 176.355

AS ORDERED ON THE DAY OF , 20 , BY THE

JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA, IN AND

HONORABLE DISTRICT JUDGE;

AT:

ON THE DAY OF

PRISONER, IN HIGH CHAMBER

INMATE STRAPPED TO TABLE

DOOR CLOSED AT

LETHAL DOSE OF INTOXICATION ADMINISTERED

SODIUM THIOPENTAL, DOSAGE

PAVULON, DOSAGE

POTASSIUM CHLORIDE, DOSAGE

INMATE PRONOUNCED DEAD

BODY REMOVED FROM CHAMBER

WITNESS

SUBMITTED BY

REVIEWED BY

MICHAEL J. BUDDEN, WARDEN
NEVADA STATE PRISON

MEDICAL CORONER

EXHIBIT 142-A

EXHIBIT 142-A

STATE OF NEVADA

OFFICE OF THE ATTORNEY GENERAL

TRANSPORTATION DIVISION

1263 South Stewart Street
Carson City, Nevada 89712

CATHERINE CORTEZ MASTO
Attorney General

KEITH MUNRO
First Assistant Attorney General

DANIEL WONG
Chief Deputy Attorney General

June 13, 2008

Gary Taylor
Assistant Federal Public Defender
411 East Bonneville Avenue, Suite 250
Las Vegas, Nevada 89101

Re: Confidential Execution Manual

Dear Gary:

I apologize for the delay in getting this to you.

Accompanying this cover letter, please find a redacted copy of the Nevada Department of Correction's current Confidential Execution Manual. The redacted portions cannot be released due to security concerns and issues. My records show I previously provided to you a copy of the revised Section IV Execution Procedure – Revised October 2007 on or about October 2, 2007.

Sincerely,

CATHERINE CORTEZ MASTO
Nevada Attorney General

By _____
Daniel Wong
Chief Deputy Attorney General / Chief Counsel
Transportation Division
(775) 888-7423

cc: Rex Reed, Nevada Department of Corrections
DW/CJS
Enc.

L:\004LegalManager\CarolWong\Correspondence\Taylor ltr re Execution Manual.doc

CONFIDENTIAL

EXECUTION MANUAL

PROCEDURES FOR EXECUTING THE DEATH PENALTY

NEVADA STATE PRISON

CONFIDENTIAL

REVISED: February 2004

Section I.

AUTHORITY – NEVADA REVISED STATUTES

NRS 176.345 Proceedings when conviction carries death penalty.

1. When a judgement of death has been pronounced, a certified copy of the judgment of conviction must be forthwith executed and attested in triplicate by the clerk under the seal of the court. There must be attached to the triplicate copies a warrant signed by the judge, attested by the clerk, under the seal of the court, which:
   a. Recites the fact of the conviction and judgment;
   b. Appoints a week, the first day being Monday and the last day being Sunday, within which the judgment is to be executed, which must not be less than 60 days nor more than 90 days from the time of judgment; and
   c. Directs the sheriff to deliver the prisoner to such authorized person as the director of the department of prisons designates to receive the prisoner, for execution. The prison must be designated in the warrant.
2. The original of the triplicate copies of the judgment of conviction and warrant must be filed in the office of the county clerk, and two of the triplicate copies must be immediately delivered by the clerk to the sheriff of the county. One of the triplicate copies must be delivered by the sheriff, with the prisoner, to such authorized person as the director of the department of prisons designates, and is the warrant and authority of the director for the imprisonment and execution of the prisoner, as therein provided and commended. The director shall return his certified copy of the judgment of conviction to the county clerk of the county in which it was issued. The other triplicate copy id the warrant and authority of the sheriff to deliver the prisoner to the authorized person designated by the director. The final triplicate copy must be returned to the county clerk by the sheriff with his proceedings endorsed thereon.

NRS 176.355 Execution of death penalty: Method; time and place; witnesses.

1. The judgment of death must be inflected by an injection of lethal drug.
2. The director of the department of prisons shall:
   a. Execute a sentence of death within the week, the first day being Monday and the last day being Sunday, that the judgement is to be executed, as designated by the district court. The director may execute the judgment at any time during that week if a stay of execution is not entered by a court of appropriate jurisdiction.
   b. Select the drug or combination of drugs to be used for the execution after consulting with the state health officer.
   c. Be present at the execution.
   d. Notify those members of the immediate family of the victim who have, pursuant to NRS 176.357, requested to be informed of the time, date and place scheduled for the execution.
   e. Invite a competent physician, the county coroner, a psychiatrist and not less than six reputable citizens over the age of 21 years to be present at the execution. The director

shall give preference to those eligible members or representatives of the immediate family of the victim who requested, pursuant to NRS 176.357, to attend the execution.

3. The execution must take place at the state prison.
4. A person who has not been invited by the director may not witness the execution.

NRS 176.357 Request for notification of execution of death penalty; request to attend.

1. If after a conviction for murder a judgment of death has been pronounced, each member of the immediate family of the victim who is 21 years of age or older may submit a written request to the director to be informed of the time, date and place scheduled for the execution of the sentence of death. The request for notification may be accompanied by a written request to attend or nominate a representative to attend the execution.
2. As used in this section, "immediate family" means persons who are related by blood, adoption or marriage, within the second degree of consanguinity or affinity.

NRS 176.365 Director of department of corrections to make return on death warrant.
After the execution, the director of the department of prisons must make a return upon the death warrant to the court by which the judgment was rendered, showing the time, place, mode and manner in which it was executed.

NRS 176.495 New warrant generally.

1. If for any reason a judgement of death has not been executed, and it remains in force, the court in which the conviction was had must, upon the application of the attorney general or the district attorney of the county in which the conviction was had, cause another warrant to be drawn, signed by the judge and attested by the clerk under the seal of the court, and delivered to the director of the department of prisons.
2. The warrant must state the conviction and judgment and appoint a week, the first day being Monday and the last day being Sunday, within which the judgement is to be executed. The first day of that week must be not less than 15 days nor more than 30 days after the date of the warrant. The director shall execute a sentence of death within the week the judgment is to be executed, as designated by the district court. The director may execute the judgment at any time during that week if a stay of execution is not entered by a court of appropriate jurisdiction.
3. Where sentence was imposed by a district court composed of three judges, the district judge before whom the confession or plea was made, or his successor in office, shall designate the week of execution, the first day being Monday and the last day being Sunday, and sign the warrant.

NRS 454.213 Authority to possess and administer dangerous drug.

9. Any person designated by the head of a correctional institution.

NRS 454.221 Furnishing dangerous drug without prescription prohibited; penalty; exceptions.

1. A person who furnishes any dangerous drug except upon the prescription of a practitioner is guilty of a category D felony and shall be punished as provided in NRS 193.130, unless the dangerous drug was obtained originally by a legal prescription.
2. The provisions of this section do not apply to the furnishing of any dangerous drug by:

f. A pharmacy in a correctional institution to a person designated by the director of the department of prisons to administer a lethal injection to a person who has been sentenced to death.

Exception

In the case of a female person, upon whom has been imposed the judgment of death, such person shall be delivered to the Warden of the Southern Nevada Women's Correctional Facility and there to be held pending decision upon appeal. Upon exhausting the appeal process, the female person sentenced to death shall be delivered to the Warden of the Nevada State Prison at [redacted] In the event of an eleventh hour commutation of sentence, said female prisoner shall be returned to the Southern Nevada Women's Correctional Facility, there to be confined pursuant to such commutation.

Section II.

OVERVIEW OF THE DAY OF EXECUTION

At approximately 10:30 a.m. (all times are approximate and may be adjusted on an "as needed" basis) on the day of the execution, the assigned sergeant and [redacted] observation officers will report to the condemned man's living unit. They will take with them two complete sets of new state-issue clothing, which have been searched by the sergeant. They will enter the unit and proceed to the cell of the condemned inmate. The condemned inmate will not be allowed to bring with him any personal items. All of the inmate's personal property will be thoroughly searched by the sergeant, who will also fill out an inventory sheet, which will be counter signed by the condemned inmate. His personal property will be disposed of in accordance with departmental procedures. He will then be allowed to eat lunch at approximately [redacted] After being positively identified, the condemned inmate will then be taken to the unit office where he will be stripped and body searched. He will then put on one set of new clothing, consisting of a pair of jeans, shirt, socks, underwear and tennis shoes. The inmate will be placed in leg and wrist restraints, and escorted to the last night cell area by the [redacted] observation officers. Direct sight coverage will be maintained by the officers of the condemned inmate when he is moved into the last night cell. The second set of clothing will be stored in the last night cell area.

Should the inmate have a radio and/or TV set, they will not be allowed to be placed in the cell but will be in the outer corridor of the cell. He will then be introduced to the [redacted] observation officers (one of the officers is relief). Following the inmate being placed in the last night cell area he will again be positively identified by a staff identification officer and the Associate Warden of Operations.

The inmate will be informed that his dinner will be served at approximately [redacted] He will also be asked who his spiritual advisor is and if he desires a visit from him or the Institutional Chaplain. The Institutional Chaplain will be assigned to the Nevada State Prison the day before the execution and the day of the execution.

At approximately 4:00 – 4:30 p.m., his dinner will be brought from the Culinary of the Nevada State Prison by a sergeant and [redacted] The dinner will be personally prepared by [redacted] and such preparation shall be witnessed by the Culinary officer. Coffee will be available throughout the night.

[redacted]

Note: In the event that more than one inmate is scheduled for execution on the same day, [redacted] observation officers will be utilized.

Following the completion of dinner, until two hours prior to the time set for execution, the inmate may receive visits from his spiritual advisor, the Director, and the Warden. The observation officers will remain in the institution from the start of the observation ~~officers~~ until

the execution is completed. Any other visitors, except as mentioned above, must be approved by the Director.

The inmate will be allowed to send out last letters to the news media and his family. Requests other then those above must be processed through the Nevada State Prison Warden for his approval.

At no time will the condemned inmate be out of visual observation of the observation officers.

Section III.

LIST OF NEEDED EQUIPMENT AND MATERIALS (MAY VARY)

1. Portable stretcher, equipped with restraining straps, one blanket and one pillow.
2. Cardiac monitor. **
3. One stop watch, one stethoscope, one pair surgical shears, and one pocket flashlight.
4. Two medium straight hemostats.
5. Two tourniquets, adhesive tape, both narrow and wide, one roll of gauze, several gauze pads, alcohol, sponges, and tongue depressor.
6. Two intravenous flasks (500 ml each) containing normal saline.
7. Three 10 ml syringes containing the necessary amount of Pavulon, clearly marked.
8. Three 140 ml syringes containing the necessary amount of Sodium Thiopental, clearly marked.
9. Three 140 ml syringes containing the necessary amount of Potassium Chloride, clearly marked.
10. Six 30 cc vials of Sodium Chloride for Diluent, (for mixing drugs).
11. Two 18-gauge intercath needles, 1 ¼" long.
12. Two standard fluid administration tubing sets with "Y" injection site.
13. Two extension sets.
14. Two 60 cc syringes (for mixing drugs).
15. Two 3 cc syringes with 21 gauge, 1 ½" needles attached.
16. Two injection needles, 20 gauge 2".
17. One 18 gauge 1 ½" needles (mixing medication).
18. Sterile cut-down tray if necessary.
19. Four syringes containing 10 mg. of Valium each.
20. Blood spill kit.

Note: In the event of two or more inmates being scheduled for execution on the same day, the above listed items will be provided for each inmate, with the exception of those indicated by ** which will require only one.

Drugs of Choice

The lethal substances and amounts to be used in the execution are:

1. Sodium Thiopental 5 grams.
2. Pavulon 20 milligrams.
3. Potassium Chloride 160 milliequivalents.

Personal differences exist. At times dosages have to be increased for certain individuals, although the above doses are lethal for most individuals. It will be the responsibility of the physician, working in conjunction with the staff pharmacist, to ensure that the above is sufficient to cause death.

NOTE: In the event of two or more inmates being scheduled for execution on the same day, the above listed items will be provided for each inmate.

Section IV.

EXECUTION PROCEDURE

The condemned inmate shall be pre-medicated with a sedative approximately four hours and one hour before the Execution is scheduled to occur. This sedative pre-medication is mandatory.

Medical services personnel will administer the sedative pre-medication orally. This sedative pre-medication is intended to provide a calming affect and shall not cause any lack of cognitive ability, incoherency or incompetence. A physician will determine the appropriate sedative and dosage.

A five-member security team will relieve the observation commander and the three observation officers approximately one hour prior to the time of Execution.

The window shades of the Execution Chamber shall be raised prior to the condemned inmate entering the Execution Chamber. Prior to the time of Execution, the condemned inmate will be escorted into the Execution Chamber by one supervisor and three officers. The condemned inmate will be placed on the table and the restraints will be secured. The window shades inside the Execution Chamber will remain raised during the Execution procedure.

Appropriate medical services personnel will perform the actual venipuncture. Venipuncture will occur into the veins of both arms. Once the venipunctures are completed, the needles will be taped securely into place and will be checked for patency. If the venipuncturist is unable to find an adequate vein in an arm, the venipuncture will occur into the vein of a leg. Once the venipunctures are completed, a stethoscope (if necessary) and cardiac monitor will be attached by the security team commander and checked to ensure they are functioning correctly. The medical services personnel will then leave the Execution Chamber.

A normal saline solution will then be infused at a slow rate in order to keep the system clear.

Three syringes - one each containing the appropriate doses of Sodium Thiopental, Pavulon and Potassium Chloride – constituting one set will be available. Three sets will be available.

The lethal injections shall be administered individually by syringe into a "Y" injection site of the intravenous tubing. The order of injection shall be first – Sodium Thiopental, second – Pavulon, and third – Potassium Chloride. At the order of the Director to proceed, the lethal injections will be administered at a rapid rate. Once started, the lethal injections will continue until all three syringes of two sets are administered and emptied. The first syringe of the first set and the first syringe of the second set will be administered simultaneously. The second syringe of both sets will be administered simultaneously. The third syringe of both sets will be administered simultaneously.

Once the lethal injections have been administered, the attending physician or designee and coroner shall then determine whether it was sufficient to cause death. If the previous lethal injections are determined to be insufficient to cause death, the third set of lethal injections shall be administered.

Once the death pronouncement has been made, all witnesses, observers and media personnel will be escorted from the Execution Chamber viewing area. All unused lethal injection solutions shall be handled in a most careful manner and returned to the Pharmacy to be inventoried and disposed of appropriately. The disposition of all solutions will be recorded including how much was used and how much was discarded.

NOTE: A physician may examine the condemned inmate prior to the scheduled Execution to determine if it might be necessary to utilize a vein in the leg for the venipuncture, or if there is an indication that a cut-down may be necessary.

Revised October 2007.

Section V.

WITNESS PROCEDURE

Nevada law requires there be at least six, but no more than nine, witnesses to attend an execution. The Director must approve all witnesses and/or other persons to be present.

NOTE: Instead of being on-call, a deputy from the Attorney General's office will be present at Nevada State Prison from 8:00 p.m. until the execution is over.

The witnesses will arrive at the institution approximately one hour prior to the execution and be escorted to the Visiting Room. Each witness will be given an I.D. card.

Approximately 25 minutes before the scheduled execution time the Associate Warden of Programs will escort the witnesses to the execution chamber via the Unit 3 (Cellhouse) entrance. When the escort reaches the bottom of the stairs, the witness group will proceed into Unit 3 and up the stairs and into the witness room. The witnesses will not be allowed to take any cameras, recording devices, or any personal items into the witness area.

None of the personnel involved in the execution will be in sight, and all blinds to the chamber will be closed. When all witnesses are in the witness area, the AWO will notify the PIO in the Courthouse. The PIO will then escort the media witnesses to the witness area utilizing the same route used by the AWP. The 217 door leading to the witness room will be closed but it is not necessary to lock it. The shades will then be raised and the inmate will be escorted into the chamber and secured on the table. ~~The shades will then be drawn.~~

~~Once the venipuncture and attachment of the stethoscope and cardiac monitor has been completed, the security team commander will raise the shades so the witnesses may view the execution.~~ The spiritual advisor will be allowed to witness the execution from the west execution chamber window. When the physician and coroner have declared the inmate dead, the shades will be drawn.

The media witnesses will then be escorted out of the chamber area and out of the institution. The official witnesses will then complete the affidavits provided by the AWP. Following completion of these affidavits, the AWP will escort the witnesses out of the institution.

NOTE: In the event two or more inmates are scheduled for execution on the same day, the witnesses will be escorted to the Visiting Room between executions and will be executed back to the execution chamber prior to the second execution following the same procedure listed above. Members of the media will be allowed to exit NSP to the area outside the fence between executions if they wish to do so. They will then be escorted back to the execution chamber area by the PIO as outlined above.

The Associate Warden of Operations will be provided with a body receipt in triplicate that will be completed when the mortician accepts delivery of the body.

The death certificate will be completed by the attending physician and the coroner will also complete his/her section of the death certificate. It shall be the Associate Warden of Operations' responsibility to ensure these documents are completed and accurate.

Following the completion of all required forms, the body will be released to the mortician. After the body has been loaded into the call car, the call car will exit through the maintenance gate. After a security inspection is completed the vehicle will exit NSP property.

Section VI.

EXTRA DUTY STATIONS AND SECURITY PLAN FOR THE EXECUTION OF THE DEATH PENALTY

The following plan of action has been designated to provide for complete security coverage of the Nevada State Prison during an execution of the death penalty.

[redacted]

[redacted]

Section VII.

INTERNAL CONTROL PLAN

[redacted]

Section VIII.

POST-EXECUTION PROCEDURE

[redacted]

Immediately following the execution of the death penalty, the body shall be removed and turned over to the attending mortician, following the procedures for the death of an inmate.

NOTE: In the event two or more executions are scheduled for the same day, a separate vehicle as outlined above will be required for each inmate.

All disposable equipment, including needles, tubing, etc., will be turned over to the prison pharmacist for proper disposal within one working day. If unavailable, then they will be secured in the NSP pharmacy until the next business day.

Unopened solutions or drugs will be turned over to the prison pharmacist for proper handling within one working day. If unavailable, then they will be secured in the NSP pharmacy until the next business day.

The disposition of all solutions is to be recorded, as to the amount used and the amount discarded. The number of solutions that were utilized will be recorded by volume, and those that were turned over to the pharmacist, will also be recorded by number and volume.

The security team will have the responsibility of cleaning the execution chamber.

All staff directly involved in the execution will meet in the Courthouse with the designated clergy members, at which time, a debriefing will be conducted as well as psych counseling will be provided.

It shall be the responsibility of the Associate Warden of Operations to release all of the officers on overtime status and the decision will be based on the situation, as he/she perceives it.

Section IX.

COMMUTATION OR STAY OF EXECUTION

It must be understood that once infusion of the lethal injection has begun that the execution cannot be stopped.

In the event of an eleventh hour stay of execution, all preparations will cease and the Director will be immediately notified by the Warden.

If the condemned inmate has already been taken to the execution chamber, he/she shall be returned to the last night cell and all personnel shall remain on duty until released by the Associate Warden of Operations.

The on-call Deputy Attorney General, if not present at the institution, shall be notified of the situation as soon as possible. The availability of the on-call Deputy Attorney General shall be coordinated by the AWP at NSP and the Chief Deputy of the Criminal Division of the Attorney General's office.

Section X.

SAMPLE OF FORMS USED DURING THE EXECUTION PROCESS

A. Execution Checklist

B. Execution Position Assignments

C. Affidavit

D. I.D. Department Identification Form

E. Letters of Agreement – Medical Services

F. Telephone Logs

G. Radio communications Assignment Memo [redacted]

H. Report and Schedule of Execution, Exhibit "A" (Time Keeper Checklist)

I. Maps - Nevada State Prison
- Execution Chamber
- NSP Parking Lot

EXHIBIT 143

EXHIBIT 143

No.03-6821

IN THE UNITED STATES SUPREME COURT

October Term, 2003

DAVID LARRY NELSON,
Petitioner,

vs.

DONAL CAMPBELL,
Commissioner of the Alabama Department of Corrections,
and
GRANTT CULLIVER,
Warden of William C. Holman Correctional Facility,
Respondents.

ON PETITION FOR WRIT OF CERTIORARI
TO THE UNITED STATES COURT OF APPEALS
FOR THE ELEVENTH CIRCUIT

BRIEF OF AMICI CURIAE IN SUPPORT OF PETITIONER

KATHRYN LOUISE LIPPERT
Alabama Bar No. ASB-8428-I64K
Post Office Box 661111
Birmingham, Alabama 35266
Telephone (205) 426-3705
Fax Number (205) 426-3750

Counsel for Amici Curiae

AMICI CURIAE

Dr. Laurie Dill
Montgomery, Alabama

Dr. Frank J. Hogan
Montgomery, Alabama

Dr. David W. Hode
Selma, Alabama

Dr. Mark C. D. Mitchell
Atmore, Alabama

Dr. Jane Mobley
Birmingham, Alabama

Dr. William Wintersitz
Tuscaloosa, Alabama

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In the Supreme Court of the State of Nevada

WILLIAM P. CASTILLO, Petitioner, vs. E.K. McDANIEL, Warden, Ely State Prison, CATHERINE CORTEZ MASTO, Attorney General for Nevada, Respondents.	No. 56176

APPELLANT'S APPENDIX

Appeal from Order Denying Petition for Writ of Habeas Corpus (Post-Conviction)

Eighth Judicial District Court, Clark County

VOLUME 11 of 21

FRANNY A. FORSMAN
Federal Public Defender
GARY A. TAYLOR
Assistant Federal Public Defender
Nevada Bar No. 11031C
411 East Bonneville Ave, Ste. 250
Las Vegas, Nevada 89101
(702) 388-6577
Counsel for Appellant

principles was "whether there is a reasonable likelihood that the jury has applied the challenged instruction in a way that prevents the consideration of constitutionally relevant evidence." *Id.*, at 380, 110 S.Ct., at 1198; *see also Johnson, supra,* 509 U.S. at 367-368, 113 S.Ct., at 2669. In this case, the record clearly reflects that the jury found the State had established six aggravating circumstances beyond a reasonable doubt. The jurors were unequivocally instructed that no mitigating circumstance could outweigh any aggravator and that there had to be unanimous agreement or else a sentence of life must be imposed. Indeed, Defendant fails to demonstrate any reasonable likelihood that the jury misapplied the contested instruction and did not consider and weigh all mitigating circumstances.

Thus, there was no basis for an objection by trial counsel and indeed, appellate counsel's strategy to forego this claim on direct appeal was a sound tactical decision.

C. No submission of a special verdict form.

Defendant's final claim on this issue is that appellate counsel failed to raise the argument on direct appeal that trial counsel was ineffective for not submitting a special verdict form listing mitigating circumstances found by the jury. However, this claim likewise fails.

Defendant fails to cite any statutory or case law authority to support his contention that trial counsel's decision not to submit a special verdict form for the purpose of listing mitigating circumstances violated his Sixth Amendment guarantee to effective assistance of counsel. Indeed, this Court has held that the trial court is not obligated to grant a defendant's request for such a special verdict form and the sentencer in a capital penalty hearing is not constitutionally or statutorily required to make such specific findings. *Servin v. State*, 59 Nev. 262, 32 P.3d 1277, 1289 (2001) (*citing,* NRS 175.554(4); *Rook v. Rice,* 783 F.2d 401, 407 (4th Cir.1986)); *see also Rogers v. State,* 101 Nev. 457, 469, 705 P.2d 664, 672 (1985) (rejecting claim that district court erred by not providing jury with form or method for setting forth findings of mitigating circumstances).

Thus, trial counsel's performance can hardly be deemed to have fallen below the "reasonably effective" standard and as such, appellate counsel's decision to forego the claim on direct appeal was similarly reasonable.

VIII.

THE CONSTITUTIONALITY OF NEVADA'S PROCEDURES FOR ADMISSION OF VICTIM IMPACT TESTIMONY IS BARRED BY LAW OF THE CASE

In ground VIII, Defendant alleges appellate counsel was ineffective for "failing to raise or assert all available arguments supporting constitutional issues raised" in his claim that Nevada's statutory scheme and case law fails to properly limit the introduction of victim impact testimony. However, this claim is barred by the doctrine of the law of the case and entirely belied by the record.

Where an issue has already been decided on the merits by this Court, the Court's ruling is law of the case, and the issue will not be revisited. *Pellegrini, supra; see also, McNelton, supra; Hall, supra; Valerio, supra; Hogan, supra.* The law of a first appeal is the law of the case in all later appeals in which the facts are substantially the same; this doctrine cannot be avoided by more detailed and precisely focused argument. *Hall, supra; McNelton, supra; Hogan, supra.*

In this case, on direct appeal, Defendant argued that the "cumulative and excess victim impact testimony should not have been allowed." This Court rejected the claim finding:

> Questions of admissibility of testimony during the penalty phase of a capital trial are largely left to the trial judge's discretion and will not be disturbed absent an abuse of discretion. *Rippo v. State, supra* 113 Nev. at 1261, 946 P.2d at 1031 (*citing Smith v. State,* 110 Nev. 1094, 1106, 881 P.2d 649, 656 (1994)). A jury considering the death penalty may consider victim-impact evidence as it relates to the victim's character and the emotional impact of the murder on the victim's family. Id. (*citing, Payne v. Tennessee,* 501 U.S. 808, 827, 111 S.Ct. 2597, 2609, 115 L.Ed.2d 720 (1991); *Homick v. State,* 108 Nev. 127, 136, 825 P.2d 600, 606 (1992); *also* NRS 175.552).

> Five witnesses testified as to the character of the victims and the impact the victims' deaths had on the witnesses' lives and the lives of their families.
>
> We conclude that each testimonial was individual in nature, and that the admission of the testimony was neither cumulative nor excessive. Thus, we conclude that the district court did not abuse its discretion in allowing all five witnesses to testify. Id.

Because this issue was raised and rejected on direct appeal, Defendant's complaint here appears to be that appellate counsel failed to "assert all available arguments" supporting this claim. However, it must be noted that Defendant merely sets forth various case law in his petition but he fails entirely to make any specific factual allegations indicating where he believes appellate counsel's argument on direct appeal fell short. As such, his bare allegations are not sufficient to entitle him to relief.

Defendant does appear to imply that appellate counsel should be faulted for failing to challenge the constitutionality of Nevada's death penalty scheme as failing to limit the introduction of victim impact testimony during the penalty phase proceedings. Clearly, this is the same issue appellate counsel did indeed raise on direct appeal only here Defendant dresses it up "in different clothing." *See, Evans, supra.*

However, even if the issue were validly raised in his instant petition, Defendant's claim that Nevada law fails to limit the admission of victim impact testimony lacks merit and as such, appellate counsel's strategy to limit the argument to the particular facts of Defendant's case was reasonable.

For instance, in rejecting Defendant's claim, this Court further noted:

> Three of the witnesses referred to the brutal nature of the crime. *Rippo, supra* 113 Nev. at 1261, 946 P.2d at 1031. The State instructed the family members not to testify about how heinous the crimes were, and the district court apparently relied, in part, on these instructions in allowing the victim-impact testimony. Thus, the testimony, insofar as **it described the nature of the victims' deaths went beyond the boundaries set forth by the State.** *Id.* at 1262, 946 P.2d at 1031 (emphasis added).

Thus, clearly Defendant's claim that Nevada's capital sentencing scheme imposes "no limits on the presentation of victim impact testimony" is wholly without merit. Therefore, even if appellate counsel had delved further into the issue, claiming unconstitutionality of the sentencing structure in its entirety, there was scant chance such a claim would have survived appellate review.

IX.

THERE IS WELL-SETTLED PRECEDENT THAT NEVADA'S PREMEDITATION AND DELIBERATION INSTRUCTION IS CONSTITUTIONAL

In ground IX, Defendant alleges the "stock jury instruction given in this case defining premeditation and deliberation necessary for first degree murder" was constitutionally violative. Defendant contends that appellate counsel was ineffective for declining to raise the issue on direct appeal. However, Defendant's claim is without merit because based on well-settled precedent, there was no reasonable probability of success.

The contested instruction stated:

> Premeditation is a design, a determination to kill, distinctly formed in the mind at any moment before or at the time of the killing. Premeditation need not be for a day, an hour or even a minute. It may be instantaneous as successive thoughts of the mind. For if a jury believes from the evidence that the act constituting the killing had been preceded by and has been the result of premeditation, no matter how rapidly the premeditation is followed by the act constituting the killing, it is willful, deliberate and premeditated murder.

As Defendant correctly points out, in *Byford*, supra, the propriety of a *Kazalyn*[11] instruction was addressed. While this Court rejected the argument as a basis for any relief for the defendant ("We conclude that the evidence in this case is clearly sufficient to establish deliberation and premeditation on Byford's part.") this Court

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[11] *Kazalyn v. State*, 108 Nev. 67, 825 P.2d 578 (1992).

recognized that the instruction itself raised a "legitimate concern." *Byford*, supra, 116 Nev. at 233, 994 P.2d at 712. The *Byford* Court stated:

> The *Kazalyn* instruction and some of this court's prior opinions have underemphasized the element of deliberation. The neglect of "deliberate" as an independent element of the *mens rea* for first-degree murder seems to be a rather recent phenomenon. Before *Kazalyn*, it appears that "deliberate" and "premeditated" were both included in jury instructions without being individually defined but also without "deliberate" being reduced to a synonym of "premeditated." *See, e.g., State of Nevada v. Harris*, 12 Nev. 414, 416 (1877); *Scott v. State*, 92 Nev. 552, 554 n. 2, 554 P.2d 735, 737 n. 2 (1976). We did not address this issue in our *Kazalyn* decision, but later the same year, this court expressly approved the *Kazalyn* instruction, concluding that "deliberate" is simply redundant to "premeditated" and therefore requires no discrete definition. *See Powell v. State*, 108 Nev. 700, 708-10, 838 P.2d 921, 926-27 (1992), *vacated on other grounds by* 511 U.S. 79, 114 S.Ct. 1280 (1994). *Citing Powell*, this court went so far as to state that "the terms premeditated, deliberate and willful are a single phrase, meaning simply that the actor intended to commit the act and intended death as the result of the act." *Greene v. State*, 113 Nev. 157, 168, 931 P.2d 54, 61 (1997). We conclude that this line of authority should be abandoned. By defining only premeditation and failing to provide deliberation with any independent definition, the *Kazalyn* instruction blurs the distinction between first- and second-degree murder. *Id.* at 234-35, 994 P.2d at 713.

This court then proceed to set forth instructions for use by the district courts in cases where defendants are charged with first-degree murder based on willful, deliberate, and premeditated killing. *Id.* at 236, 994 P.2d at 714.

Now, Defendant appears to argue that even though at the time of his penalty hearing, *Kazalyn* and its progeny were valid authority, appellate counsel was nonetheless ineffective for failing to raise an issue that even this Court acknowledged had been inconsistently interpreted and applied. *Id.* at 235, 994 P.2d at 713. However, the *Byford* court made two specific findings which defy Defendant's claim.

First, under *Byford*, even an improper instruction will not justify reversal when the evidence of guilt is overwhelming and second, the holding is to be applied prospectively only. *Id.* at 233, 994 P.2d at 712; *see also Bridges v. State*, 116 Nev. 752, 762-63, 6 P.3d 1000, 1008 (2000); *Leonard v. State*, 117 Nev. 53, 74-76, 17 P.3d

397, 410 – 412 (2001); *Garner, supra, 116 Nev. at 789, 6 P.3d at 1025, (overruled on other grounds by Sharma v. State,* 118 Nev. 648, 56 P.3d 868 (2002)); *Evans, supra.*

Thus, because the evidence of Defendant's guilt was overwhelming (*see Rippo, supra,* 113 Nev. at 1255, 946 P.2d at 1027) even if appellate counsel had raised the issue, like the defendant in *Byford,* the claim would not have warranted relief. Moreover, because Defendant's appeal was dismissed well before the *Byford* ruling, he could not have benefited from this Court's ruling in any case. Therefore, Defendant's claim that appellate counsel was ineffective for failing to raise this issue on direct appeal is without merit and should be dismissed.

X.

THIS COURT'S APPELLATE REVIEW OF DEATH PENALTY CASES IS CONSTITUTIONAL

In ground X, Defendant alleges that appellate counsel was ineffective for failing to raise on appeal or assert all available arguments supporting his contention that "the opinion affirming RIPPO's conviction and sentence provides no indication that the mandatory review was fully and properly conducted in this case."

This claim is frivolous. There is absolutely no basis in either law or fact to support an allegation that appellate counsel was deficient for not raising on direct appeal this Court's alleged inadequate review of his direct appeal.

XI.

THE RACIAL COMPOSITION OF DEFENDANT'S JURY WAS CONSTITUTIONAL

In ground XI, Defendant claims that appellate counsel was ineffective because he failed to raise what he characterizes as the unconstitutional racial composition of the jury. Clearly, this claim lacks merit because it had virtually no chance of success on appeal.

Both the Fourteenth and the Sixth Amendments to the United States Constitution guarantee a defendant the right to a trial before a jury selected from a

representative cross-section of the community. *Evans v. State*, *supra*; *Holland v. Illinois*, 493 U.S. 474, 110 S.Ct. 803 (1990); *Taylor v. Louisiana*, 419 U.S. 522, 95 S.Ct. 692 (1975). "The fair-cross-section requirement mandates that 'the jury wheels, pools of names, panels, or venires from which juries are drawn must not systematically exclude distinctive groups in the community and thereby fail to be reasonably representative thereof.'" *Id.* (*quoting Taylor*, *supra*, at 702). However, there is "no requirement that petit juries actually chosen must mirror the community and reflect the various distinctive groups in the population." *Id.* (*quoting, Holland*, *supra* at 808).

The standard for a race-based challenge to the composition of a jury pool under the Sixth Amendment was set by the United States Supreme Court in *Duren v. Missouri*, 439 U.S. 357 (1979). To show a prima facie violation of the Constitution's fair cross-section requirement in selecting a jury pool: the *defendant* must show (1) that the group alleged to be excluded is a "distinctive" group in the community; (2) that the representation of this group in venires from which juries are selected is not fair and reasonable in relation to the number of such persons in the community; and (3) that this under representation is due to systematic exclusion of the group in the jury- selection process. *Id.* at 364. A "jury selection violates the Sixth Amendment or the due process and equal protection clauses of the Fourteenth Amendment *only if* it can be shown that members of the appellant's race were excluded systematically from jury duty. '(P)urposeful discrimination may not be assumed or merely asserted.'" *Bishop v. State*, 92 Nev. 510, 515, 554 P.2d 266, 270 - 270 (1976) (*quoting Swain v. Alabama*, 380 U.S. 202, 205, 85 S.Ct. 824, 827 (1965). Such discrimination must be proved. *Id.* (*citing, Tarrance v. Florida*, 188 U.S. 519, 23 S.Ct. 402 (1903)). The federal courts have repeatedly held that the use of voter registration lists to compile the jury pool is constitutionally acceptable. *See e.g., Taylor v. Louisiana*, 419 U.S. 522 (1975); *Watkins v. Commonwealth*, 385 S.E.2d 50, 53 (Va. 1989); *United*

States v. Lewis, 10 F.3d 1086, 1089-90 (4th Cir. 1993); *People v. Sanders*, 797 P.2d 561 (Cal. 1990)(*overruling People v. Harris*, 679 P.2d 433 (Cal. 1984)).

Defendant's claim here fails first because it must be the jury pool not the individual jury that is representative of a fair cross section of the community, the fact that Defendant's particular jury was entirely Caucasian does not support a prima facie constitutional violation. Similarly, the county-wide practice of comprising jury pools using voter registration rolls has been a long-standing constitutionally acceptable practice. Moreover, Defendant's claim that the county fails to follow up on the jury summons process hardly demonstrates "purposeful discrimination"; indeed, it is highly doubtful "individuals who move fairly frequently or are too busy trying to earn a living" would be considered a "distinctive" group for purposes of Sixth Amendment analysis and able to withstand constitutional scrutiny.

Therefore, Defendant's claim of ineffective assistance of counsel is unfounded.

XII.

NEVADA'S CAPITAL SENTENCING STATUTE PROPERLY NARROWS THE CATEGORIES OF DEATH ELIGIBLE DEFENDANTS

Defendant's final claim in ground XII is that appellate counsel was ineffective for failing to raise or completely assert the argument that Nevada's capital sentencing statute, NRS 200.033, fails to properly narrow the categories of death eligible defendants. However, as with Defendant's other claims, there was no reasonable probability this claim would have succeeded on appeal.

NRS 200.033 provides:

> The only circumstances by which murder of the first degree may be aggravated are:
>
> 1. The murder was committed by a person **under sentence of imprisonment.**
>
> 2. The murder was committed by a person who, at any time before a penalty hearing is conducted for the murder pursuant to NRS 175.552, **is or has been convicted of:**

a. **Another murder** and the provisions of subsection 12 do not otherwise apply to that other murder; or
b. **A felony involving the use or threat of violence** to the person of another and the provisions of subsection 4 do not otherwise apply to that felony. For the purposes of this subsection, a person shall be deemed to have been convicted at the time the jury verdict of guilt is rendered or upon pronouncement of guilt by a judge or judges sitting without a jury.

3. The murder was committed by a person who **knowingly created a great risk of death to more than one person** by means of a weapon, device or course of action which would normally be hazardous to the lives of more than one person.

4. The murder was committed while the person was engaged, alone or with others, **in the commission of, or an attempt to commit or flight after committing or attempting to commit, any robbery, arson in the first degree, burglary, invasion of the home or kidnapping in the first degree, and the person charged:**
a. Killed or attempted to kill the person murdered; or
b. Knew or had reason to know that life would be taken or lethal force used.

5. The murder was committed **to avoid or prevent a lawful arrest or to effect an escape** from custody.

6. The murder was committed by a person, for himself or another, **to receive money or any other thing of monetary value.**

7. The murder was committed **upon a peace officer** or fireman who was killed while engaged in the performance of his official duty or because of an act performed in his official capacity, and the defendant knew or reasonably should have known that the victim was a peace officer or fireman. For the purposes of this subsection, "peace officer" means:
a. An employee of the Department of Corrections who does not exercise general control over offenders imprisoned within the institutions and facilities of the Department, but whose normal duties require him to come into contact with those offenders when carrying out the duties prescribed by the Director of the Department.
b. Any person upon whom some or all of the powers of a peace officer are conferred pursuant to NRS 289.150 to 289.360, inclusive, when carrying out those powers.

8. The murder involved **torture or the mutilation** of the victim.

9. The murder was committed upon one or more persons at **random and without apparent motive.**

10. The murder was committed upon a person **less than 14 years of age.**

11. The murder was committed upon a person because of the **actual or perceived race, color, religion, national origin, physical or mental disability or sexual orientation** of that person.

12. The defendant has, in the immediate proceeding, **been convicted of more than one offense of murder in the first or second degree.** For the purposes of this subsection, a person shall be deemed to have been convicted of a murder at the time the jury verdict of guilt is rendered or upon pronouncement of guilt by a judge or judges sitting without a jury.

13. The person, alone or with others, **subjected or attempted to subject the victim of the murder to nonconsensual sexual penetration** immediately before, during or immediately after the commission of the murder. For the purposes of this subsection:
    a. "Nonconsensual" means against the victim's will or under conditions in which the person knows or reasonably should know that the victim is mentally or physically incapable of resisting, consenting or understanding the nature of his conduct, including, but not limited to, conditions in which the person knows or reasonably should know that the victim is dead.
    b. "Sexual penetration" means cunnilingus, fellatio or any intrusion, however slight, of any part of the victim's body or any object manipulated or inserted by a person, alone or with others, into the genital or anal openings of the body of the victim, whether or not the victim is alive. The term includes, but is not limited to, anal intercourse and sexual intercourse in what would be its ordinary meaning.

14. The murder was committed on the property of a **public or private school**, at an activity sponsored by a public or private school or on a school bus while the bus was engaged in its official duties by a person who intended to create a great risk of death or substantial bodily harm to more than one person by means of a weapon, device or course of action that would normally be hazardous to the lives of more than one person. For the purposes of this subsection, "school bus" has the meaning ascribed to it in NRS 483.160.

15. The murder was committed with the intent to commit, cause, aid, further or conceal an **act of terrorism.** For the purposes of this subsection, "act of terrorism" has the meaning ascribed to it in NRS 202.4415.

Defendant does not point to any particular portion of the statute he finds objectionable, but rather, asserts, "[t]he factors listed in NRS 200.033, individually and in combination fail to guide the sentencer's discretion and create an impermissible risk of vaguely defined, arbitrarily and capriciously selected individuals upon whom death is imposed." (Appellant's Opening Brief, pages 44-45). Defendant claims further that "[i]t is difficult, if not impossible, under the factors of NRS 200.033 for the perpetrator of a First Degree Murder not to be eligible for the death penalty at the unbridled discretion of the prosecutor." (Id.) However, even under this sweeping allegation, Defendant's claim that appellate counsel was ineffective for failing to raise this issue on direct appeal fails.

This Court has specifically held that these statutory aggravators, even "in combination," properly narrow the class of persons eligible for the death penalty. *Gallego v. State supra*, 117 Nev. at 370, 23 P.3d at 242 (2001); *See also, Bennett v. State*, 106 Nev. 135, 787 P.2d 797 (1990)(NRS 200.033 subdivision 4 is not constitutionally overbroad or arbitrary[12]); *Smith v. State*, 114 Nev. 33, 953 P.2d 264 (1998) (subdivision 8 is not constitutionally vague and ambiguous); *Cambro v. State*, 114 Nev. 106, 952 P.2d 946 (1998) and *Geary v. State*, 112 Nev. 1434, 930 P.2d 719 (1996) (subdivision 9 is not constitutionally vague); *Leslie v. Warden*, 59 P.3d 440 (2002)(Defense counsel was not deficient in failing to argue that "at random and without apparent motive" aggravator was not supported by evidence in penalty phase of defendant's murder trial, where Supreme Court had consistently upheld that aggravator when, as in defendant's case, killing was unnecessary to complete robbery, and defense counsel, knowing that Supreme Court was required to independently review all aggravating circumstances, may have chosen to focus on issues more likely to yield results).

[12] One of the six aggravating factors the jury in this case found to be established beyond a reasonable doubt was pursuant to subdivision 4.

Defendant relies upon two United States Supreme Court cases to bolster his contention. However, neither of these cases provides sufficient support for Defendant's claim.

In *Godfrey v. Georgia*, 446 U.S. 420, 100 S.Ct. 1759 (1980), the jury imposed two sentences of death on the defendant. As to each, the jury specified that the single aggravating circumstance they had found beyond a reasonable doubt was "that the offense of murder was outrageously or wantonly vile, horrible and inhuman." *Id.* at 426, 100 S.Ct, 1759, 1764. The Court held the aggravator violated the Eighth and Fourteenth Amendments. *Id.* at 428-28, 1765. The Court reasoned there was nothing in the words "outrageously or wantonly vile, horrible or inhuman," standing alone that implied any inherent restraint on the arbitrary and capricious infliction of a death sentence. *Id.*

In *Stringer v. Black*, 503 U.S. 222, 112 S.Ct. 1130 (1992), after finding the defendant guilty of capital murder, a Mississippi jury, in the sentencing phase of the case, found that there were three statutory aggravating factors. One of these was the murder was "especially heinous, atrocious or cruel," which had not been otherwise defined in the trial court's instructions. *Id.* at 225-26, 112 S.Ct. 1130, 1134. The Court reversed the defendant's conviction. *Id.* at 227, 112 S.Ct. at 1135. Although the Court's decision was founded wholly on other grounds, it noted the unconstitutionality of the vague aggravating factor was implicit in the Court's opinion. *Id.* at 235, 112 S.Ct. at 1139.

Although Defendant does not specifically mention *Maynard v. Cartwright*, 486 U.S. 356, 108 S.Ct. 1853 (1988), that Court similarly held that the language of an Oklahoma statute with an aggravating circumstance which read, "especially heinous, atrocious, or cruel" gave no more guidance than the "outrageously or wantonly vile, horrible or inhuman" language that the jury returned in its verdict in *Godfrey*. *Id.* at 363-64, 108 S.Ct. 1853, 1859.

Clearly, the Nevada statute does not employ any such vague or overly broad language. On the contrary, in *Gregg v. Georgia*, 428 U.S. 153, 96 S.Ct. 2909 (1976)[13], the United States Supreme Court upheld a Georgia sentencing scheme with nearly the identical language as Nevada's, even when the defendant attacked each and every aggravator individually and specifically. In upholding the sentencing statute, the Court in *Gregg* stated:

> While there is no claim that the jury in this case relied upon a vague or overbroad provision to establish the existence of a statutory aggravating circumstance, the petitioner looks to the sentencing system as a whole (as the Court did in *Furman* and we do today) and argues that it fails to reduce sufficiently the risk of arbitrary infliction of death sentences. Specifically, Gregg urges that the statutory aggravating circumstances are too broad and too vague .... *Id.* at 200, 96 S.Ct. at 2938.

Defendant here attempts to engage the same tactic as the defendant in *Gregg*. Indeed, his claim similarly fails. Clearly there is no support for his claim that the Nevada statute fails to limit the categories of death-eligible defendants to such a degree that would warrant constitutional relief. As such, his claim of effective assistance of appellate counsel must likewise fail because counsel was prudent to forego this claim in lieu of others with a far greater probability of success.

[13] In his petition Defendant cites only to the dissenting opinion at 428 U.S. 238, 92 S.Ct. 2726 (1972).

CONCLUSION

Defendant has not shown why the district court's findings were in error. Based on the aforementioned arguments, the State respectfully requests that the Order Denying Defendant's Petition for Writ of Habeas Corpus be affirmed.

Dated this 17th day of June, 2005.

Respectfully submitted,

DAVID ROGER
Clark County District Attorney
Nevada Bar # 002781

BY _____
STEVEN S. OWENS
Chief Deputy District Attorney
Nevada Bar #00004352

Office of the Clark County District Attorney
Clark County Courthouse
200 South Third Street, Suite 701
Post Office Box 552212
Las Vegas, Nevada 89155-2212
(702) 455-4711

MRippo-070116-0394

CERTIFICATE OF COMPLIANCE

I hereby certify that I have read this appellate brief, and to the best of my knowledge, information, and belief, it is not frivolous or interposed for any improper purpose. I further certify that this brief complies with all applicable Nevada Rules of Appellate Procedure, in particular NRAP 28(e), which requires every assertion in the brief regarding matters in the record to be supported by appropriate references to the record on appeal. I understand that I may be subject to sanctions in the event that the accompanying brief is not in conformity with the requirements of the Nevada Rules of Appellate Procedure.

Dated this 17th day of June, 2005.

Respectfully submitted,

DAVID ROGER
Clark County District Attorney
Nevada Bar #002781

BY 

STEVEN S. OWENS
Chief Deputy District Attorney
Nevada Bar #00004352
Office of the Clark County District Attorney
Clark County Courthouse
200 South Third Street, Suite 701
Post Office Box 552212
Las Vegas, Nevada 89155-2212
(702) 455-4711

MRippo-07016-0395

CERTIFICATE OF MAILING

I hereby certify and affirm that I mailed a copy of the foregoing Respondent's Answering Brief to the attorney of record listed below on this 17th day of June, 2005.

CHRISTOPHER R. ORAM, ESQ.
520 South Fourth Street, 2nd Floor
Las Vegas, Nevada 89101

Employee, Clark County
District Attorney's Office

OWENs/Amity Dorman/mulka

P:\APPELLATE\WPDOCS\SECRETARY\BRIEF\ANSWER\RIPPO, MICHAEL, 44098, C106784.DOC

EXHIBIT 140

EXHIBIT 140

MRippo-07016-0226

IN THE SUPREME COURT OF THE STATE OF NEVADA

* * * * *

MICHAEL RIPPO,

Appellant,

vs.

THE STATE OF NEVADA,

Respondent.

S.C. CASE NO. 44094

FILED

SEP 28 2005

JANETTE M. BLOOM
CLERK SUPREME COURT
BY _____
DEPUTY CLERK

APPEAL FROM DENIAL OF PETITION FOR WRIT OF HABEAS CORPUS (POST-CONVICTION)
EIGHTH JUDICIAL DISTRICT COURT
THE HONORABLE DONALD M. MOSLEY, PRESIDING

APPELLANT'S REPLY BRIEF

ATTORNEY FOR APPELLANT
CHRISTOPHER R. ORAM, ESQ.
Attorney at Law
Nevada Bar No. 004349
520 S. Fourth Street, 2nd Floor
Las Vegas, Nevada 89101
Telephone: (702) 384-5563

ATTORNEY FOR RESPONDENT
DAVID ROGER
District Attorney
Nevada Bar No. 002781
200 S. Third Street, 7th Floor
Las Vegas, Nevada 89155
Telephone: (702) 455-4711

BRIAN SANDOVAL
Nevada Attorney General
Nevada Bar No. 0003805
100 North Carson Street
Carson City, Nevada 89701-4717

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

SEP 28 2005

MRippo-07016-0227

IN THE SUPREME COURT OF THE STATE OF NEVADA

* * * * *

MICHAEL RIPPO, Appellant, vs. THE STATE OF NEVADA, Respondent.	S.C. CASE NO. 44094

APPEAL FROM DENIAL OF PETITION FOR WRIT OF HABEAS CORPUS (POST-CONVICTION)
EIGHTH JUDICIAL DISTRICT COURT
THE HONORABLE DONALD M. MOSLEY, PRESIDING

APPELLANT'S REPLY BRIEF

ATTORNEY FOR APPELLANT
CHRISTOPHER R. ORAM, ESQ.
Attorney at Law
Nevada Bar No. 004349
520 S. Fourth Street, 2nd Floor
Las Vegas, Nevada 89101
Telephone: (702) 384-5563

ATTORNEY FOR RESPONDENT
DAVID ROGER
District Attorney
Nevada Bar No. 002781
200 S. Third Street, 7th Floor
Las Vegas, Nevada 89155
Telephone: (702) 455-4711

BRIAN SANDOVAL
Nevada Attorney General
Nevada Bar No. 0003805
100 North Carson Street
Carson City, Nevada 89701-4717

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

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520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

ISSUES PRESENTED FOR REVIEW

I. RIPPO'S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE JURY WAS ALLOWED TO USE OVERLAPPING AGGRAVATING CIRCUMSTANCES IN IMPOSING THE DEATH PENALTY. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

II. RIPPO'S CONVICTION AND SENTENCE ARE INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE RIPPO WAS NOT AFFORDED EFFECTIVE ASSISTANCE OF COUNSEL ON DIRECT APPEAL. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

III. TRIAL COUNSEL WOLFSON INSISTED THAT RIPPO WAIVE HIS RIGHT TO SPEEDY TRIAL AND THEN ALLOWED THE CASE TO LANGUISH FOR 46 MONTHS BEFORE PROCEEDING TO TRIAL.

IV. THE PERFORMANCE OF TRIAL COUNSEL DURING THE GUILT PHASE OF THE TRIAL FELL BELOW THE STANDARD OF REASONABLY EFFECTIVE COUNSEL IN THE FOLLOWING RESPECTS:

a. Failure to Object to the Use of a Prison Photograph of Rippo as Being Irrelevant, Unduly Prejudicial and Evidence of Other Bad Acts.

V. THE PERFORMANCE OF TRIAL COUNSEL DURING THE PENALTY PHASE OF THE TRIAL FELL BELOW THE STANDARD OF REASONABLY EFFECTIVE COUNSEL IN THE FOLLOWING RESPECTS:

(a.) Failure to Object to Unconstitutional Jury Instructions at the Penalty Hearing That Did Not Define and Limit the Use of Character Evidence by the Jury.

(b) Failure to Offer Any Jury Instruction with Rippo's Specific Mitigating Circumstances and Failed to Object to an Instruction That Only Listed the Statutory Mitigators and Failed to Submit a Special Verdict Form Listing Mitigatating Circumstances Found by the Jury.

©). Failure to Argue the Existence of Specific Mitigating Circumstances During Closing Argument at the Penalty Hearing or the Weighing Process Necessary Before the Death Penalty Is Even an Option for the Jury.

(d). Failure to Object to Improper Closing Argument at the Penalty Hearing.

(e) Trial Counsel Failed to Move to Strike Two Aggravating Circumstances That Were Based on Invalid Convictions.

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

VI. THE INSTRUCTION GIVEN AT THE PENALTY HEARING FAILED TO APPRAISE JURY OF THE PROPER USE OF CHARACTER EVIDENCE AND AS SUCH THE IMPOSITION OF THE DEATH PENALTY WAS ARBITRARY NOT BASED ON VALID WEIGHING OF AGGRAVATING AND MITIGATING CIRCUMSTANCES IN VIOLATION OF THE FIFTH, SIXTH, EIGHTH AND FOURTEENTH AMENDMENTS TO THE CONSTITUTION.

VII. RIPPO'S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARNTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE JURY WAS NOT INSTRUCTED ON SPECIFIC MITIGATING CIRCUMSTANCES BUT RATHER ONLY GIVEN THE STATUTORY LIST AND THE JURY WAS NOT GIVEN A SPECIAL VERDICT FONT TO LIST MITIGATING CIRCUMSTANCES. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

VIII. RIPPO'S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE NEVADA STATUTORY SCHEME AND CASE LAW FAILS TO PROPERLY LIMIT THE INTRODUCTION OF VICTIM IMPACT TESTIMONY AND THEREFORE VIOLATES THE PROHIBITION AGAINST CRUEL AND UNUSUAL PUNISHMENT IN THE EIGHTH AMENDMENT AND FURTHER VIOLATES THE RIGHT TO A FAIR AND NON-ARBITRARY SENTENCING PROCEEDING AND DUE PROCESS OF LAW UNDER THE 14TH AMENDMENT. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

IX. THE STOCK JURY INSTRUCTION GIVEN IN THIS CASE DEFINING PREMEDITATION AND DELIBERATION NECESSARY FOR FIRST DEGREE MURDER AS "INSTANTANEOUS AS SUCCESSIVE THOUGHTS OF THE MIND" INSTRUCTION VIOLATED THE CONSTITUTIONAL GUARANTEES OF DUE PROCESS AND EQUAL PROTECTION, WAS VAGUE AND RELIEVED THE STATE OF IT' S BURDEN OF PROOF ON EVERY ELEMENT OF THE CRIME. UNITED STATES CONSTITUTION AMENDMENTS 5, 6,\8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTION 5, 6, 8, AND 14; ARTICLE IV, SECTION 21.

X. RIPPO'S CONVICTION AND SENTENCE INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, AND RELIABLE SENTENCE DUE TO THE FAILURE OF This Court TO CONDUCT FAIR AND ADEQUATE APPELLATE REVIEW. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE T, SECTIONS 3, 6 AND 8; ARTICLE IV,

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

SECTION 21.

XI. RIPPO'S CONVICTION AND SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEES OF DUE PROCESS, EQUAL PROTECTION, IMPARTIAL JURY FROM CROSS-SECTION OF THE COMMUNITY, AND RELIABLE DETERMINATION DUE TO THE TRIAL, CONVICTION AND SENTENCE BEING IMPOSED BY A JURY FROM WHICH AFRICAN AMERICANS AND OTHER MINORITIES WERE SYSTEMATICALLY EXCLUDED AND UNDER REPRESENTED. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE T, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

XII. RIPPO' S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE NEVADA STATUTORY SCHEME AND CASE LAW WITH RESPECT TO THE AGGRAVATING CIRCUMSTANCES ENUNCIATED IN NRS 200.033 FAIL TO NARROW THE CATEGORIES OF DEATH ELIGIBLE DEFENDANTS.

STATEMENT OF THE CASE

Appellant hereby adopts the statement of the facts as annunciated in Appellant's Opening Brief.

STATEMENT OF FACTS

Appellant hereby adopts the statement of the facts as annunciated in Appellant's Opening Brief.

ARGUMENT

I. RIPPO'S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE JURY WAS ALLOWED TO USE OVERLAPPING AGGRAVATING CIRCUMSTANCES IN IMPOSING THE DEATH PENALTY. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

After the penalty phase, the jury sentenced Mr. Rippo to death finding six aggravating circumstances. The aggravating circumstances relevant for purposes of this issue are 1) the

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

murder was committed by a person under sentence of imprisonment; 2) the murder was committed by a person who had been previously been convicted of a felony involving the use of threat of violence to another person; 3) the murders were committed by a person engaged in the commission of or an attempt to commit robbery; 4) the murder was committed while the person was engaged in the commission of or an attempt to commit burglary (S.A., VOL. 17, pp. 3163-3164). [1] On direct appeal, appellate counsel argued that Mr. Rippo's sentence of death had been improperly decided based upon the jury considering overlapping aggravators. On direct appeal, this Court concluded that Mr. Rippo could have been prosecuted separately for each of the underlying felonies and therefore each crime was properly considered as an aggravating circumstance. At the time of direct appeal, this Court had not yet decided McConnell v. State, 102 Ad. Op. 105, 102 P.3d 606 (December 29, 2004). In Mr. Rippo's opening brief, he requested that this Court revisit this issue based upon this Court's ruling in McConnell v. State.

In the State's Answering brief, the State argues that this issue is barred by the law of the case doctrine (State's Answering Brief, pp. 5). The State correctly points out that this argument was in fact raised on direct appeal. However, the Court can take notice that the McConnell decision was not decided at the time of Mr. Rippo's direct appeal. Additionally, the State argues that this issue was not briefed in the Defendant's Petition for Writ of Habeas Corpus in the district court below (State's Answering Brief, pp. 6). The State's argument is inaccurate. In fact, on August 8, 2002, Supplemental Points and Authorities in Support of the Petition for Writ of Habeas Corpus were filed on behalf of Mr. Rippo. Originally, Mr. David Schieck was appointed to represent Mr. Rippo in his Post-Conviction Relief. In the Supplemental Brief, Mr. Schieck wrote

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[1] Mr. Rippo was also found to have committed murder that involved torture. This Court held on direct appeal there was sufficient evidence to find that the murder involved torture. Therefore, this aggravator had already been deemed to be valid.

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

that this issue had been previously raised on direct appeal. At the end of informing the district court that the issue had been raised on direct appeal, Mr. Rippo states,

> Rippo as part of his Supplemental Petition, herein, reasserts that the death penalty was returned in violation of the Eighth and Fourteenth Amendment right to a fair sentencing proceedings and one not arbitrary and capricious in its use. (See, Supplemental Brief (A.A. VOL. I, pp. 031).

The State is correct when they argue that Mr. Rippo did not extensively brief the McConnell decision in the Writ of Habeas Corpus. However, Mr. Rippo clearly reasserted this issue for Post-Conviction Relief purposes. Hence, the State's argument that this issue was not briefed in the petition below is inaccurate. Mr. Rippo would respectfully request that this Court revisit this issue based upon McConnell v. State.

The State was permitted at the penalty phase to double count the same conduct in accumulating three aggravating circumstances(S.A., Vol. 17, pp. 3191-392). The robbery, burglary and kidnapping aggravating circumstances are all based on the same set of operative facts and unfairly accumulated to compel the jury towards the death penalty. Additionally, the aggravators for under sentence of imprisonment and prior conviction of a violent felony both arose from the same 1982 sexual assault conviction. In McConnell, this Court concluded that,

> The interpretation of our death penalty statutes that we now embrace will provide a more certain framework within which prosecutors statewide may exercise their very important discretion in these matters, and will provide greater certainty and fairness of application within the trial, appellate, and federal court systems. 102 P.3d. 606, 627.

This Court's conclusion provides the Court's concern that there be greater certainty and fairness in the application of the death penalty within the trial, appellate, and federal court systems. It therefore comes to reason that this Court was concerned about the entire weighing process of aggravators whether or not the defendant is at trial, on appeal, or in habeas review in the federal court system. Mr. Rippo raised this issue on direct appeal and reasserted the issue at post-

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

conviction. Moreover, Mr. Rippo has raised this issue again, before this Court.

This Court ruled in McConnell, that Nevada's definition of capital murder did not narrow enough and that the further narrowing of the death penalty eligibility in needed. Further, this Court stated that the aggravator does not provide sufficient narrowing to satisfy constitutional requirements.

The McConnell Court stated, "[N]evada's statutes defines felony murder broadly." Under NRS 200.030(1)(d), felony murder is "one that is committed in the perpetration or attempted perpetration of sexual assault, kidnapping, arson, robbery, burglary, invasion of the home, sexual abuse of a child, sexual molestation under the age under 14, or child abuse." Further, in Nevada, all felony murder is first degree murder, and all first degree murder is essentially capital murder. Felony murder in Nevada does not even require the intent to kill or inflict great bodily harm. In Nevada, the intent simply to commit the underlying felony is transferred to the implied malice necessary to characterize the death be murder. Ford v. State, 99 Nev. 209, 215, 660 P.2d 992,995 (1983).

The McConnell Court noted, "[N]evada's current definition Nevada's current definition of felony murder is broader than the definition in 1972 when Furman v. Georgia, 408 U.S. 238, 92 S.Ct. 2726, 33 L.ed 2d 346, which temporarily ended executions in the United States."

This Court further stated that, Nevada's definition of felony murder does not afford constitutional narrowing. The ultimate holding in McConnell is that this Court "deemed it impermissible under the United States and Nevada Constitution to place an aggravating circumstance in a capital prosecution on the felony on which the felony murder is predicated." Based upon McConnell, it was impermissible for the State to charge Mr. Rippo with felony capital murder because the State based the aggravating circumstances in a capital prosecution on two of those felonies upon which the State's felony murder is predicated. McConnell, further, held that,

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

in cases like Mr. Rippo's, "where the State bases a first degree murder conviction in whole or part of felony murder, to seek a death sentence the State will have to prove an aggravator other than one based on the felony murder predicate felony." McConnell v. State, at 624.

In the instant case, the State was successful in obtaining a death sentence against Mr. Rippo on three aggravating circumstances that would not be permitted pursuant to the McConnell decision. As this Court instructed in McConnell, the State would have to give the jury a special verdict form to determine whether they found Mr. Rippo guilty of premeditated and deliberate murder or whether they found Mr. Rippo guilty of First Degree Murder based upon the felony murder rule. Unfortunately, no one can answer this question. Mr. Rippo is sentenced to death after the jury found three aggravating circumstances that were clearly a result of inappropriate stacking(S.A., Vol. 17, pp. 3191-392).

Additionally, two aggravating circumstances against Mr. Rippo were found as a result of the same actions. One aggravator came as a result of Mr. Rippo being under sentence of imprisonment and another aggravator was that he had prior conviction (the same conviction) of a violent felony which arose from the same 1982 sexual assault conviction.

The Double Jeopardy Clause of the Fifth Amendment guarantees that no person shall "be subject for the same offense to be twice put in jeopardy of life or limb." The traditional test of the "same offense" for double jeopardy purposes is whether one offense requires proof of an element which the other does not. Bockburaer v. U.S., 284 U.S. 299, 304 (1932). This test, does not apply, however, when one offense is an incident of another; that is, when one of the offenses is a lesser included of the other. U.S. v. Dixon, 509 U.S. 688, 113 S.Ct. 2849. 2857 (1993); Illinois v. Vitale, 447 U.S. 410, 420 100 S.Ct. 2260 (1980).

Courts of other jurisdictions have found the use of such overlapping aggravating circumstances to be improper. In Randolph v. State, 463 So.2d 186 (Fla. 1984) the court found that

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

the aggravating circumstances of murder while engaged in the crime of robbery and murder for pecuniary gain to be overlapping and constituted only a single aggravating circumstance. See also Provence v. State, 337 So.2d 783 (Fla. 1976) cert. denied 431 U.S. 969, 97 S.Ct. 2929, 53 L.Ed.2d 1065 (1977).

In essence, Mr. Rippo suffered as a result of two aggravating circumstances from the identical behavior. The State was not required to prove any additional facts to establish two separate aggravating circumstances.

In summary, at least four aggravating circumstances appear to be unconstitutional. Admittedly, the State would have been permitted to argue to a jury that Mr. Rippo was under sentence of imprisonment and that the murders involved torture. However, the other four aggravating circumstances (robbery, kidnaping, burglary and a previous violence offense) were all a result of unconstitutional stacking of aggravating circumstances(S.A., Vol. 17, pp. 3191-392).

In the State's answering brief, they claim that there is ample evidence of premeditation and deliberation just as there was in McConnell (State's Answering Brief, pp. 7). Unlike McConnell, Mr. Rippo did not plead guilty and admit to premeditated and deliberated First Degree Murder. In fact, there was a lengthy discussion by this Court in the McConnell, decision regarding the defendant's admission that he had committed first degree murder by premeditation and deliberation. In the instant case, that is not the case. Mr. Rippo denied culpability and proceeded to trial. Nevada is a weighing state, and there is no concrete evidence that a jury would have sentenced Mr. Rippo to death had they only been able to find two aggravating circumstances as opposed to the six that they did find. In Nevada, the jury is required to proceed through a weighing process of aggravators versus mitigators. Second, the jury has the discretion, even in the absence of mitigation to return a life sentence irregardless of the number of aggravating circumstances. The State can not argue that the numerical stacking of aggravating circumstances

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

wasn't the proverbial straw that broke the camel's back and tipped the scales of justice.

The stacking of aggravating circumstances based on the same conduct results in the arbitrary and capricious imposition of the death penalty, and allows the State to seek the death penalty based on arbitrary legal technicalities and artful pleading. This violates the commands of the United States Supreme Court in Grecy v. Georgia, 428 U.S. 153 (1976) and violates the Eighth Amendment to the United States Constitution and the prohibition in the Nevada Constitution against cruel and unusual punishment and that which guarantees due process of law. Trial counsel was deficient in failing to strike the duplicate and overlapping aggravating circumstances.

In the State's answering brief, they state, "[w]eighing three aggravators against no mitigating circumstances would produce the same penalty the jury found with six aggravators (State's Answering Brief, pp. 10). The State can not claim to know how a jury would have weighed the aggravators versus the mitigators had they only been able to find two and not six.

Lastly, the State claims that the McConnell decision should not be applied retroactively to Mr. Rippo's case. The State claims that this Court does not appear willing to apply the McConnell, decision retroactively. Mr. Rippo disagrees.

In 1982, this Court considered the issue of retroactivity in Franklin v. Nevada 98 Nev. 266, 646 P.2d, 543(1982). In Franklin, this Court stated, "[I]n places determining complete retroactivity or prospectivity of new constitutional rules, the Supreme Court has consistently considered three factors: 1) the purpose of the rule; 2) the reliance on prior contrary law; and 3) the effect retroactive application would have on the administration of justice. Franklin at 269 fn. 2, See Tehan v. United States, 382 U.S. 406 (1966).

In Gier v. Ninth Judicial District Court of Nevada, this Court provided that, "[n]ew rules apply prospectively unless they are rules of constitutional law, and then they apply retroactively only under certain circumstance." Gier v. Ninth Judicial District Court of the State of Nevada, 106

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520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

Nev. 208, at 212; 789 P.2d 1245 (1990), See Franklin v. State, 98 Nev. 2666, 646 P.2d 543 (1982). In Teague v. Lane, Director, Illinois Department of Corrections, 489 U.S. 288 109 S. Ct. 1060; 103 L.Ed 2d 334 (1989), the United States Supreme Court articulated that in a new rule of constitutional dimension would apply retroactively. In Teague, the majority opinion provided two exceptions when a new constitutional rule would apply retroactively. A new constitutional rule should be applied retroactively ". . . if it required the observance of the bedrock procedural elements that were absolutely prerequisite to the fundamental fairness implicit in the concept of ordered liberty." Id.

The United States Supreme Court has held that in general, a case announces a new rule when it breaks new ground or imposes a new obligation on the State or Federal government. Teague, 489 U.S.288 at 301.

Perhaps, Justice O'Connor was concerned with a legal principle the Supreme Court addressed in Teague. The Supreme Court explained that, "[f]urthermore, as we recognized in Engle v. Issac, [s]tate courts are understandably frustrated when they faithfully apply existing constitutional law only to have a federal court discover during a habeas proceedings, new constitutional commands" Teague, 489 U.S. 288 at 310. (citations omitted). In Teague, United States Supreme Court addresses the concerns mirrored by Justice O'Connor in her dissenting opinion in Ring. It is interesting and important to note that in both instances the Court was addressing defendants who are attacking constitutional issues in habeas proceedings after exhausting their state remedies.

In the instant case, Mr. Rippo specifically raised this issue on direct appeal. Therefore, the McConnell, decision should be applied to him. Second, a review of McConnell, does not make it clear whether or not the McConnell decision should be applied retroactively. However, based on the fact that this Court in McConnell, relied on prior case law. Combined with the fact that this

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

Court in McConnell concluded that the McConnell decision would provide greater certainty and fairness of application within the trial, appellate and federal court systems. This appears to indicate that this Court is willing to apply the McConnell decision to the instant case. Out of fairness and equity, Mr. Rippo specifically raised this issue prior to the McConnell decision on direct appeal. Mr. Rippo reasserted this issue on post-conviction relief. Mr. Rippo has extensively briefed this issue on appeal from post-conviction relief. Mr. Rippo should receive the benefit of this Court's ruling in McConnell and the application of McConnell to Mr. Rippo's case would provide to greater certainty and fairness of the application within the appellate and federal court system. Mr. Rippo respectfully request that this Court deem the four aggravating circumstances in question unconstitutional. Mr. Rippo would respectfully request that this Court reverse his sentences of death and remand the case for a new penalty phase.

II. RIPPO'S CONVICTION AND SENTENCE ARE INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE RIPPO WAS NOT AFFORDED EFFECTIVE ASSISTANCE OF COUNSEL ON DIRECT APPEAL. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

This issue is submitted.

III. THE PERFORMANCE OF TRIAL COUNSEL DURING THE PENALTY PHASE OF THE TRIAL FELL BELOW THE STANDARD OF REASONABLY EFFECTIVE ASSISTANCE OF COUNSEL IN THE FOLLOWING RESPECTS.

A. The failure to offer any jury instruction with Rippo's specific mitigating circumstances and failed to object to an instruction that only listed the statutory mitigators and failed to submit a special verdict form listing mitigating circumstances found by the jury.

There was no verdict form provided to the jury for the purpose of finding the existence of

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This argument is taken out of chronological order from appellant's opening brief. The purpose is to address the penalty phase issues together for purposes of this reply brief.

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520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

tailored mitigating circumstances. A review of the entire record on appeal demonstrates that a number of mitigating circumstances should have been urged to the jury. They were:

(1) Accomplice and participant Diana Hunt received favorable treatment and is already eligible for parole;
(2) Rippo came from a dysfunctional childhood;
(3) Rippo failed to receive proper treatment and counseling from the juvenile justice system;
(4) Rippo, at the age of 17, was certified as an adult and sent to adult prison because the State of Nevada discontinued a treatment facility of violent juvenile behaviors;
(5) Rippo was an emotionally disturbed child that needed long term treatment, which he never received;
(6) Rippo never committed a serious disciplinary offense while in prison, and is not a danger;
(7) Rippo worked well in prison and has been a leader to some of the other persons in prison;
(8) Rippo has demonstrated remorse; and
(9) Rippo was under the influence of drugs at the time of the offense.

Death penalty statutes must be structured to prevent the penalty being imposed in an arbitrary and unpredictable fashion. Gregg v. Georgia, 428 U.S. 153, 96 S.Ct. 2909, 49 L.Ed.2d 859 (1976); Furman v. Georgia, 408 U.S. 238, 92 S.Ct. 2126, 33 L.Ed.2d 346 (1972). A capital defendant must be allowed to introduce any relevant mitigating evidence regarding his character and record and circumstance of the offense. Woodson v. North Carolina, 428 U.S. 280,96 S.Ct. 2978, 49 L.Ed.2d 944 (1976); Eddings v. Oklahoma, 455 U.S. 104, 102 S.Ct. 869, 71 L.Ed.2d 1 (1982).

In Lockett v. Ohio, 438 US 586, 98 S.Ct 2954, 57 L.Ed. 2d 973 (1978) the Court held that in order to meet constitutional muster a penalty hearing scheme must allow consideration as a mitigating circumstance any aspect of the defendant's character or record or any of the circumstances of the offense that the defendant proffers as a basis for a sentence of less than death. See also Hitchcock v. Duacier, 481 US 393, 107 S.Ct. 1821, 95 L.Ed.2d 347 (1987) and Parker v. Duacer, 498 US 308, 111 S.Ct 731, 112 L.Ed.2d 812 (1991).

In response, the State argues that trial counsel failed to argue all of the mitigating circumstances listed in appellant's opening brief, based upon a trial tactic. The State contends,

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

"[t]hus, trial counsel was presented with an extremely delicate balancing act. That he chose to illuminate some details in his summation and leave others to be considered as part of the evidence as a whole was clearly a reasonable course" (State's Answering Brief, pp. 22). The State must remember that Mr. Rippo's life held in the balance. It can hardly be considered a tactical decision to fail to raise mitigating circumstances. By the State's own admission, trial counsel failed to argue that Mr. Rippo was remorseful and the he was under the influence of drugs at the time of the murder and that Diana Hunt had received favorable treatment after testifying against the defendant (Appellant's Opening Brief, pp. 21, lines 17-21).

During the evidentiary hearing, (post-conviction relief) appellate counsel, Mr. David Schieck explained,

> And it's been my experience that its much better to list what you believe your mitigators are in an instruction to the jury, number one, so that they know they can consider those, and that that's your theory of mitigation.
>
> Second, the jury, should be given the opportunity to check on a proper verdict form which mitigators they have found in the case, so with the Court at a later date is going to re-weigh the death penalty, they'll know that the jury found their were, in fact, the existence of mitigating circumstances. (A. A., Volume II, 329-330).

Mr. Schieck further stated, "[i]n hindsight, I believe I should have raised it. Failure to properly instruct, not the argument of counsel, the failure to properly instruct the jury as to the use of those mitigating circumstances, the Supreme Court since Mr. Rippo's direct appeal has ruled that the defense is entitled to an instruction that lists your mitigating circumstances, not just the laundry list. And I believe I should have raised it when I did the appeal back in 1992." (A.A.,Vol. II, pp. 330-331).

Therefore, the State's contention that appellant's counsel was not remiss for failing to raise this issue on direct appeal is belied by the testimony of appellate counsel. Appellate counsel, agreed at the post-conviction evidentiary hearing that he should have raised the issue on direct

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

appeal. The appellate counsel and trial counsel failed to object to the improper closing argument at the penalty phase.

During closing argument, at the penalty phase, the prosecutor made the following argument to the jury: "[a]nd I would pose the question now: Do you have the resolve, the courage, the intestinal fortitude, the sense of commitment to do your legal duty?" (A.A. Vol. II, pp.108).

In Evans v. State, 117 Nev. Ad. Op. 50 (2002) this Court considered the exact same comments and found:

> Other prosecutorial remarks were excessive and unacceptable and should have been challenged at trial and on direct appeal. In rebuttal closing, the prosecutor asked, 'do you as a jury have the resolve, the determination, the courage, the intestinal fortitude, the sense of legal commitment to do your legal duty?' Asking the jury if it had the 'intestinal fortitude' to do its 'legal duty' was highly improper. The United States Supreme Court held that a prosecutor erred in trying 'to exhort the jury to do its job'; that kind of pressure . . .has no place in the administration of criminal justice' 'There should be no suggestion that a jury has a duty to decide one way or the other; such an appeal is designed to stir passion and can only distract a jury from it's actual duty: impartiality'. The prosecutor's words here 'resolve,' 'determination,' 'courage,' 'intestinal fortitude,' 'commitment,' 'duty'– were particularly designed to stir the jury's passion and appeal to partiality.

In the State's answering brief, they argue that trial counsel was not ineffective for objecting to this argument. The State cites to the district court's comment during the evidentiary hearing wherein the court determined that objected at closing argument is a rather dangerous situation that looks like counsel is hiding the ball (State's Answering Brief, pp. 24, lines 13-14). The State cites the district court's opinion from the bench that objecting during closing argument has the appearance to the jury that the defense is hiding the ball. Hypocritically, the State throughout their brief argues that issues can not be considered by this Court unless there is a contemporaneous objection. In fact, the State argues that since trial counsel failed to object to this comment that this should preclude appellate consideration (State's Answering Brief, pp. 22. lines 26-27). On the one hand, the State would have this Court believe that it is appropriate tactics for trial counsel to fail

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

to object because it has the appearance of "hiding the ball". On the other hand, since defense counsel failed to object this Court should not consider the issue. Mr. Rippo was damned if his attorney objects because it appears he is "hiding the ball". Mr. Rippo is damned if his attorney doesn't object because then the issue can't be raised for appellate consideration. This argument is obviously in direct contradiction to the rules of advocacy. Mr. Rippo was on trial for his live. When the State makes an objectionable comment during closing argument counsel should object so that this Court can consider the issues. The district court's determination that objecting has the appearance that the defense is hiding the ball is meritless. That type of tactic only leads to the State arguing on appeal that the issue should not be considered of the failure to object. Hence, the failure to object provides appellate counsel with an argument of plain error only.

The State correctly points out that in Evans, this Court considered other factors in reversing Mr. Evans sentence of death besides the single comments made by the prosecutor in closing argument. However, in viewing the record as a whole, this Court will note that Mr. Rippo endured numerous errors during the penalty phase.

Lastly, the State argues that at the evidentiary hearing, Judge Mosley stated, "[h]ow would defense counsel know they would have a legal ground to object without the benefit of the Supreme Court determination." (State's Answering Brief, pp. 24, lines 10-12). The district court inquired how appellate counsel would have been able to raise this issue on direct appeal and trial counsel having knowledge that this was objectionable given the fact that the Evans decision was subsequent to Mr. Rippo's penalty phase. To answer the district court's question, one only needs to review the testimony given by appellate counsel Mr. David Schieck at the evidentiary hearing. During the evidentiary hearing, Mr. Schieck was asked about this particular statement during the closing argument of the penalty phase. Mr. Schieck responded that the had heard that quote in many of his cases (AA.,Vol. II, pp. 342). Mr. Schieck admitted that he had not raised the issue

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520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

on direct appeal. (AA.,Vol. II, pp. 342). Mr. Schieck explained that he had been the trial and appellate counsel for Billy Castillo and had heard the same prosecutor make an almost identical argument (AA.,Vol. II, pp. 343). During the Castillo trial, Mr. Schieck objected and raised the issue on direct appeal. This is an interesting coincidence, as the State cited to the Castillo decision in their answering brief (State's Answering Brief, pp. 23. footnote 7).

In Castillo v. State, 114 Nev. 271. 279-280, 956 P.2d 103, 109 (1998), this Court noted that Mr. Castillo's appellate counsel raised the issue as to the prosecutor's argument on future dangerousness not the reference to the jury's duty. Therefore, the district court concern that appellate counsel would not have known this issue is belied by the evidentiary hearing transcript of Mr. Schieck. Mr. Schieck was trial counsel for Billy Castillo and objected to a similar if not identical statement by the prosecutor. On appeal, Mr. Schieck raised the issue of improper argument by the prosecutor as an issue of future dangerousness and not moral duty. Therefore, the logical reasoning demonstrates that appellate counsel in the instant case, was aware of this issue and had seen this type of argument many times.

Admittedly, at the evidentiary hearing, Mr. Schieck explained that he could not recall if the Castillo matter went to trial before or after he competed the appellate brief for Mr. Rippo. However, the issue remains the same in both Mr. Rippo's case and in Mr. Evan's case. The prosecutor was the same in both cases. The prosecutor made an almost identical argument in both cases. In Evans, the prosecutor's argument was found to be a factor in determining that Mr. Evan's penalty phase should be reversed. Here, the prosecutor's argument was just as damaging and improper as it was in the Evans case. A review of the entire penalty phase demonstrates that the State was permitted to receive multiple overlapping and stacking aggravators along with improper argument. These problems are compounded by the fact that there was no jury instruction listing the tailored mitigators that could have been offered for Mr. Rippo.

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520 South Fourth Street, Second Floor
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It was error for trial counsel to fail to object to this improper argument and failure to raise this matter on direct appeal.

IV. THE INSTRUCTION GIVEN AT THE PENALTY HEARING FAILED TO APPRAISE JURY OF THE PROPER USE OF CHARACTER EVIDENCE AND AS SUCH THE IMPOSITION OF THE DEATH PENALTY WAS ARBITRARY NOT BASED ON VALID WEIGHING OF AGGRAVATING AND MITIGATING CIRCUMSTANCES IN VIOLATION OF THE FIFTH, SIXTH, EIGHTH AND FOURTEENTH AMENDMENTS TO THE CONSTITUTION.

In the case at bar, in addition to the alleged aggravating circumstances there was a great deal of "character evidence" offered by the State that was used to urge the jury to return a verdict of death. The jury, however, was never instructed that the "character evidence" or evidence of other bad acts that were not statutory aggravating circumstances could not be used in the weighing process.

Instruction No. 7 given to the jury erroneously spelled out the process as follows:

> The State has alleged that aggravating circumstances are present in this case. The defendants have alleged that certain mitigating circumstances are present in this case.
>
> It shall be your duty to determine:
>
> (a) Whether an aggravating circumstance or circumstances are found to exist; and
> (b) Whether a mitigating circumstance or circumstances are found to exist; and
> ©) Based upon these findings, whether a defendant should be sentenced to life imprisonment or death.
>
> The jury may impose a sentence of death only if (1) the jurors unanimously find at least one aggravating circumstance has been established beyond a reasonable doubt and (2) the jurors unanimously find that there are no mitigating circumstances sufficient to outweigh the aggravating circumstance or circumstances found.
> Otherwise, the punishment imposed shall be imprisonment in the State Prison for life with or without the possibility of parole.
> A mitigating circumstance itself need not be agreed to unanimously; that is, any one juror can find a mitigating circumstance without the agreement of any other juror or jurors. The entire jury must agree unanimously, however, as to whether the aggravating circumstances outweigh the mitigating circumstances or whether the mitigating circumstances outweigh the aggravating circumstances." (SA., Vol. 17, pp. 3171).

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The jury was also told in Instruction 20 that:

> The jury is instructed that in determining the appropriate penalty to be imposed in this case that it may consider all evidence introduced and instructions given at both the penalty hearing phase of these proceedings and at the trial of this matter (S. A. Vol. 17, pp. 3184).

The jury was never instructed that character evidence was not to be part of the weighing process to determine death eligibility or given any guidance as to how to treat the character evidence. The closing arguments of defense counsel also did not discuss the use of the character evidence in the weighing process and that such evidence could not be used in the determination of the existence of aggravating or mitigating circumstances.

In Brooks v. Kemp, 762 F.2d 1383 (11th Cir. 1985) the Court described the procedure that must be followed by a sentencing jury under a statutory scheme similar to Nevada:

> After a conviction of murder, a capital sentencing hearing may be held. The jury hears evidence and argument and is then instructed about statutory aggravating circumstances. The Court explained this instruction as follows:
>
> The purpose of the statutory aggravating circumstance is to limit to a large degree, but not completely, the fact finder's discretion. Unless at least one of the ten statutory aggravating circumstances exist, the death penalty may not be imposed in any event. If there exists at least one statutory aggravating circumstance, the death penalty may be imposed but the fact finder has a discretion to decline to do so without giving any reason ... [citation omitted]. In making the decision as to the penalty, the fact finder takes into consideration all circumstances before it from both the guilt-innocence and the sentence phase of the trial. The circumstances relate to both the offense and the defendant.
>
> [citation omitted] . The United States Supreme Court upheld the constitutionality of structuring the sentencing jury's discretion in such a manner. Zant v. Stephens, 462 13.5. 862, 103 S.Ct. 2733, 77 L.Ed.2d 235 (1963)" Brooks, 762 F.2d at 1405.

In Witter v. State, 112 Nev. 908, 921 P.2d 886 (1996) the Court stated:

> Under NRS 175.552, the trial court is given broad discretion on questions concerning the admissibility of evidence at a penalty hearing. Guy, 108 Nev. 770, 839 P.2d 578. In Robins v. State, 106 Nev. 611, 798 P.2d 558 (1990), cert. denied, 499 U.S. 970 (1991), this court held that evidence of uncharged crimes is admissible at a penalty hearing once any aggravating circumstance has been proven

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

beyond a reasonable doubt. Witter, 112 Nev. at 916.

Additionally in Gallego v. State, 101 Nev. 782, 711 P.2d 856 (1995) the court in discussing the procedure in death penalty cases stated:

> If the death penalty option survives the balancing of aggravating and mitigating circumstances, Nevada law permits consideration by the sentencing panel of other evidence relevant to sentence NRS 175.552. Whether such additional evidence will be admitted is a determination reposited in the sound discretion of the trial judge. Gallego, at 791.

More recently the Court made crystal clear the manner to properly instruct the jury on use of character evidence:

> To determine that a death sentence is warranted, a jury considers three types of evidence:'evidence relating to aggravating circumstances, mitigating circumstances and 'any other matter which the court deems relevant to sentence' . The evidence at issue here was the third type, 'other matter' evidence. In deciding whether to return a death sentence, the jury can consider such evidence only after finding the defendant death—eligible, i.e., after is has found unanimously at least one enumerated aggravator and each juror has found that any mitigators do not outweigh the aggravators. Of course, if the jury decides that death is not appropriate, it can still consider 'other matter' evidence in deciding on another sentence. Evans v. State, 117 Nev. Ad. Op. 50 (2001).

On direct appeal, this issue was not raised. At the evidentiary hearing, appellate counsel, Mr. Schieck, explained, "... and I'm sure I had concerns over the instructions and the process that was being used in death penalty cases that - - and this is one of those issues that I believe I should have raised to preserve the issue, without necessarily believing the Supreme Court was going to change the existing precedent on it, in order to preserve for further challenges. And the Supreme Court has changed the instruction on talking about the use of character evidence, and when it can be build into the weighing process." (A.A., Vol. II, pp. 357).

Mr. Schieck admitted that this was an issue that should have been raised on direct appeal. In the instant case, there was a great deal of character evidence offered against Mr. Rippo. As in Evans, the prosecutor made a similar improper argument regarding the moral duty of the jury and

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

stressed the character of both Mr. Evans and Mr. Rippo. Mr. Evans received a new penalty phased based upon several assignments of error. In the instant case, Mr. Rippo has also suffered from numerous error in both the trial and penalty phase. For the foregoing reasons, Mr. Rippo respectfully requests that this Court reverse his sentences of death and remand the case for a new penalty phase based upon violations of the United States Constitution Amendments Five, Six, Eight and Fourteen.

V. **TRIAL COUNSEL WOLFSON INSISTED THAT RIPPO WAIVE HIS RIGHT TO SPEEDY TRIAL AND THEN ALLOWED THE CASE TO LANGUISH FOR 46 MONTHS BEFORE PROCEEDING TO TRIAL.**

This issue is submitted as set forth in opening brief.

VI. **THE PERFORMANCE OF TRIAL COUNSEL DURING THE PENALTY PHASE OF THE TRIAL FELL BELOW THE STANDARD OF REASONABLY EFFECTIVE COUNSEL IN THE FOLLOWING RESPECTS:**

(a.) Failure to Object to Unconstitutional Jury Instructions at the Penalty Hearing That Did Not Define and Limit the Use of Character Evidence by the Jury.

(b) Failure to Offer Any Jury Instruction with Rippo's Specific Mitigating Circumstances and Failed to Object to an Instruction That Only Listed the Statutory Mitigators and Failed to Submit a Special Verdict Form Listing Mitigatating Circumstances Found by the Jury.

©). Failure to Argue the Existence of Specific Mitigating Circumstances During Closing Argument at the Penalty Hearing or the Weighing Process Necessary Before the Death Penalty Is Even an Option for the Jury.

(d). Failure to Object to Improper Closing Argument at the Penalty Hearing.

(e) Trial Counsel Failed to Move to Strike Two Aggravating Circumstances That Were Based on Invalid Convictions.

This issue is submitted as set forth in opening brief.

VII. **RIPPO'S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARNTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE JURY WAS NOT INSTRUCTED ON SPECIFIC MITIGATING CIRCUMSTANCES BUT RATHER ONLY GIVEN THE STATUTORY LIST AND THE JURY WAS NOT GIVEN A SPECIAL VERDICT FONT TO LIST MITIGATING CIRCUMSTANCES. UNITED STATES**

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

This issue is submitted as set forth in opening brief.

VIII. RIPPO'S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE NEVADA STATUTORY SCHEME AND CASE LAW FAILS TO PROPERLY LIMIT THE INTRODUCTION OF VICTIM IMPACT TESTIMONY AND THEREFORE VIOLATES THE PROHIBITION AGAINST CRUEL AND UNUSUAL PUNISHMENT IN THE EIGHTH AMENDMENT AND FURTHER VIOLATES THE RIGHT TO A FAIR AND NON-ARBITRARY SENTENCING PROCEEDING AND DUE PROCESS OF LAW UNDER THE 14TH AMENDMENT. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

This issue is submitted as set forth in opening brief.

IX. THE STOCK JURY INSTRUCTION GIVEN IN THIS CASE DEFINING PREMEDITATION AND DELIBERATION NECESSARY FOR FIRST DEGREE MURDER AS "INSTANTANEOUS AS SUCCESSIVE THOUGHTS OF THE MIND" INSTRUCTION VIOLATED THE CONSTITUTIONAL GUARANTEES OF DUE PROCESS AND EQUAL PROTECTION, WAS VAGUE AND RELIEVED THE STATE OF IT' S BURDEN OF PROOF ON EVERY ELEMENT OF THE CRIME. UNITED STATES CONSTITUTION AMENDMENTS 5, 6,8, AND 14; NEVADA CONSTITUTION ARTICLE I, SECTION 5, 6, 8, AND 14; ARTICLE IV, SECTION 21.

This issue is submitted as set forth in opening brief.

X. RIPPO'S CONVICTION AND SENTENCE INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, AND RELIABLE SENTENCE DUE TO THE FAILURE OF This Court TO CONDUCT FAIR AND ADEQUATE APPELLATE REVIEW. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE T, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

This issue is submitted as set forth in opening brief.

XI. RIPPO'S CONVICTION AND SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEES OF DUE PROCESS, EQUAL PROTECTION, IMPARTIAL JURY FROM CROSS-SECTION OF THE COMMUNITY, AND RELIABLE DETERMINATION DUE TO THE TRIAL, CONVICTION AND SENTENCE BEING IMPOSED BY A JURY FROM WHICH

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

AFRICAN AMERICANS AND OTHER MINORITIES WERE SYSTEMATICALLY EXCLUDED AND UNDER REPRESENTED. UNITED STATES CONSTITUTION AMENDMENTS 5, 6, 8, AND 14; NEVADA CONSTITUTION ARTICLE T, SECTIONS 3, 6 AND 8; ARTICLE IV, SECTION 21.

This issue is submitted as set forth in opening brief.

XII. **RIPPO' S SENTENCE IS INVALID UNDER THE STATE AND FEDERAL CONSTITUTIONAL GUARANTEE OF DUE PROCESS, EQUAL PROTECTION OF THE LAWS, EFFECTIVE ASSISTANCE OF COUNSEL AND RELIABLE SENTENCE BECAUSE THE NEVADA STATUTORY SCHEME AND CASE LAW WITH RESPECT TO THE AGGRAVATING CIRCUMSTANCES ENUNCIATED IN NRS 200.033 FAIL TO NARROW THE CATEGORIES OF DEATH ELIGIBLE DEFENDANTS.**

This issue is submitted as set forth in opening brief.

CONCLUSION

Based on the foregoing Mr. Rippo would respectfully request that this Court reverse his convictions based on violations of the Fifth, Sixth, and Fourteenth Amendments to the United States Constitution.

DATED this 26 day of September, 2005.

Respectfully submitted by:

CHRISTOPHER R. ORAM, ESQ.
Nevada Bar No. 004349
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101
Attorney for Appellant

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CERTIFICATE OF COMPLIANCE

I hereby certify that I have read this appellate brief, and to the best of my knowledge, information, and belief, it is not frivolous or interposed for any improper purpose. I further certify that this brief complies with all applicable Nevada Rules of Appellate Procedure, in particular NRAP 28(e), which requires every assertion in the brief regarding matters in the record to be supported by appropriate references to the record on appeal. I understand that I may be subject to sanctions in the event that the accompanying brief is not in conformity with the requirements of the Nevada Rules of Appellate Procedure.

DATED this 26 day of September, 2005.

Respectfully submitted by,

CHRISTOPHER R. ORAM, ESQ.
Nevada Bar No. 004349
520 S. Fourth Street, 2nd Floor
Las Vegas, Nevada 89101
(702) 384-5563
Attorney for Appellant

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CERTIFICATE OF MAILING

I hereby certify that I am an employee of CHRISTOPHER R. ORAM, ESQ., and that on the 30 day of September, 2004, I did deposit in the United States Post Office, at Las Vegas, Nevada, in a sealed envelope with postage fully pre-paid thereon, a true and correct copy of the above and foregoing **APPELLANT'S REPLY BRIEF**, addressed to:

David Roger
District Attorney
200 S. Third Street, 7th Floor
Las Vegas, Nevada 89155

Brian Sandoval
Attorney General
100 North Carson Street
Carson City, Nevada 89701-4717

Simone Mirabelli
An employee of Christopher R. Oram, Esq.

EXHIBIT 141

EXHIBIT 141

IN THE SUPREME COURT OF THE STATE OF NEVADA

* * * * *

MICHAEL RIPPO,

Appellant,

vs.

THE STATE OF NEVADA,

Respondent.

S.C. CASE NO. 44094

APPEAL FROM DENIAL OF PETITION FOR WRIT OF HABEAS CORPUS (POST-CONVICTION)
EIGHTH JUDICIAL DISTRICT COURT
THE HONORABLE DONALD M. MOSLEY, PRESIDING

APPELLANT'S SUPPLEMENTAL BRIEF AS ORDERED BY THIS COURT

ATTORNEY FOR APPELLANT
CHRISTOPHER R. ORAM, ESQ.
Attorney at Law
Nevada Bar No. 004349
520 S. Fourth Street, 2nd Floor
Las Vegas, Nevada 89101
Telephone: (702) 384-5563

ATTORNEY FOR RESPONDENT
DAVID ROGER
District Attorney
Nevada Bar No. 002781
200 S. Third Street, 7th Floor
Las Vegas, Nevada 89155
Telephone: (702) 455-4711

BRIAN SANDOVAL
Nevada Attorney General
Nevada Bar No. 0003805
100 North Carson Street
Carson City, Nevada 89701-4717

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

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520 South Fourth Street. Second Floor
Las Vegas, Nevada 89101

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520 South Fourth Street, Second Floor
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Las Vegas, Nevada 89101

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520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

ISSUES PRESENTED FOR REVIEW

A. MCCONNELL MUST BE RETROACTIVELY APPLIED TO CASES ON COLLATERAL REVIEW.

B. THE RESULT IN MCCONNELL WAS DICTATED BY LOWENFIELD V. PHELPS.

C. MCCONNELL MUST BE RETROACTIVELY APPLIED BECAUSE IT IS A SUBSTANTIVE RULE OF LAW.

D. MCCONNELL IS RETROACTIVE UNDER THE ANALYSIS OF COLWELL V. STATE.

E. THE IMPROPER AND UNCONSTITUTIONAL AGGRAVATING CIRCUMSTANCE IS NOT HARMLESS ERROR.

STATEMENT OF THE CASE

On May 19, 2005, Mr. Rippo filed his opening brief with this Court. On June 17, 2005, the State submitted their answering brief. On September 30, 2005, the State requested leave to file a supplemental answering brief (formatting their brief to the supplement appendix submitted by Appellant). On October 18, 2005, this Honorable Court granted the State's motion for leave to file supplemental brief. This Court also ordered that supplemental briefing be conducted and submitted to the Court addressing the retroactivity of McConnell. Additionally, post-conviction counsel, David Schieck raised this issue in Mr. Rippo's supplemental brief (before McConnell was decided).

STATEMENT OF FACTS

Appellant hereby adopts the statement of the facts as annunciated in Appellant's Opening Brief.

ARGUMENT

A. MCCONNELL MUST BE RETROACTIVELY APPLIED TO CASES ON COLLATERAL REVIEW.

As a preliminary matter, the state is incorrect when it argues that this Court intended to hint at the non-retroactivity of McConnell in its decision on direct appeal. As this Court

made clear in its decision denying rehearing, the retroactivity question should only be decided when it is raised and briefed in a post-conviction case. See McConnell v. State, 121 Nev. __, 107 P.3d 1287, 1290 (2005) ("McConnell did not address whether the ruling regarding felony aggravators is retroactive, but we did not overlook this issue. Before deciding retroactivity, we prefer to await the appropriate post-conviction case that presents and briefs the issue."). Given the state's invocation of a retroactivity defense in its answer, Mr. Rippo's appeal presents an appropriate opportunity for this Court to resolve that question. As explained below, McConnell must be applied retroactively under the framework of Colwell v. State, 118 Nev. 807, 59 P.3d 463 (2003), as well as under this Court's prior decisions retroactively applying narrowing constructions of aggravating circumstances on collateral review.

The state argues that this Court's decision in McConnell is a new rule of law and therefore does not need to be applied to cases pending on habeas corpus under Colwell v. State, 118 Nev. 807, 59 P.3d 463 (2002). See Ans. Br. at 13-15. Mr. Rippo does not dispute the fact that his judgment of conviction is final. He does contest, however, the state's argument that McConnell created new law by holding that aggravating circumstances must be narrowly construed.

A review of similar cases reveals that in similar circumstances the courts have given full recognition to and retroactive application of decisions holding state death penalty schemes unconstitutional, in whole or in part, based upon the failure to narrowly define the class of persons eligible for the death penalty. These cases should be followed here as a failure to do so would be a violation of Mr. Rippo's constitutional rights of due process of

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

law and equal protection.

It has long been held by the United States Supreme Court that "a State's capital sentencing scheme ... must 'genuinely narrow the class of persons eligible for the death penalty." Hollaway v. State, 116 Nev. 732, 6 P.3d 987, 996 (2000) (quoting Arave v. Creech, 507 U.S. 463, 474 (1993) (in turn quoting Zant v. Stephens, 462 U.S. 862, 877 (1983)). This concept originated in Furman v. Georgia, 408 U.S. 238 (1972) as the Court found that a state's death penalty scheme was arbitrary and capricious in its operation. Following Furman, this Court invalidated all death sentences, without distinction as to whether the judgments were final or not:

> In as much as the decision in Furman v. Georgia, 408 U.S. 238, 92 S.Ct.2726, 33 L.Ed.2d 346 (1972), is fully retroactive, any prisoner now under the sentence of death, the judgment as to which is final, may file a petition for writ of habeas corpus in the district court from which he was sentenced inviting that court to modify its judgment to provide for the appropriate alternative punishment specified by statute for the crime for which he was sentenced to death.

Walker v. State, 88 Nev. 539, 540 n.1, 501 P.2d 651 n.1 (1972).

In response to Furman, various state legislatures took two approaches. Some limited the discretion of juries by prescribing guidelines that the jury or sentencing judge must consider in determining whether to fix the sentence at death or life imprisonment and other states provided for mandatory death sentences for certain narrowly defined crimes. In 1976, the United States Supreme Court considered five death penalty cases in which it upheld the guideline approach and rejected the mandatory death sentence approach. The guideline approach was upheld in Gregg v. Georgia, 428 U.S. 153 (1976); Proffitt v. Florida, 428 U.S. 242(1976); and Jurek v. Texas, 428 U.S. 262(1976). The mandatory

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

sentencing approach was rejected in Woodson v. North Carolina, 428 U.S. 280 (1976) and Roberts (Stanislaus) v. Louisiana, 428 U.S. 325 (1976). Nevada was one of the states that enacted a mandatory scheme. See Schuman v. Wolff, 791 F. 2d 788, 791 (9th Cir. 1986). Accordingly, in 1977, the Nevada Legislature amended the statutory scheme for imposition of the death penalty to provide for the current system of weighing aggravating and mitigating circumstances. Id.

In the meantime, during the period in which the mandatory death penalty scheme was in operation, defendant Raymond Schuman was sentenced to death upon a finding that he committed murder of another inmate while under a sentence of life in prison without the possibility of parole. Id. at 790. This Court affirmed his conviction and sentence of death after finding that the mandatory death penalty was permissible under these limited circumstances. Shuman v. State, 94 Nev. 265, 578 P.2d 1183 (1978). Shuman then filed a state post-conviction petition and in 1982, several years after his judgment of conviction was final, he filed a federal habeas corpus petition. Shuman, 791 F. 2d at 790. The federal district court found that the mandatory death penalty scheme violated Shuman's constitutional rights and the Ninth Circuit affirmed this decision. Id. Upon the state's certiorari petition, the United States Supreme Court affirmed the Ninth Circuit and also concluded that the district court was proper in granting habeas corpus relief as the scheme under which Shuman was sentenced to death was unconstitutional. Sumner v. Shuman, 483 U.S. 66, 77-78 (1987). Thus, despite the fact that Shuman's judgment was final and the case was in habeas corpus proceedings, relief was granted based upon the unconstitutionality of that portion of the death penalty scheme that provided for a

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

mandatory sentence of death under Shuman's circumstances.

More recently, in Robins v. State, 106 Nev. 611, 629-30, 798 P.2d 558, 563 (1990), this Court narrowly construed the "depravity of mind" aggravating circumstance to require torture, mutilation or other serious and depraved physical abuse beyond the act of killing. This construction was made so as to avoid a claim that the "depravity of mind" aggravating circumstance did not provide clear and objective standards for the jury as set forth by the United States Supreme Court in Godfrey v. Georgia, 446 U.S. 420, 428-29 (1980) and Maynard v. Cartwright, 486 U.S. 356 (1988). The narrow construction defined in Robins has been applied in habeas corpus proceedings for cases that were final prior to Robins. See Browning v. State, 120 Nev. __, 91 P.3d 39, 50 (2004) (decision on direct appeal final in 1988); State v. Haberstroh, 119 Nev. ___, 69 P.3d 676, 682-83 (2003) (decision on direct appeal final in 1989); see also Valerio v. Crawford, 306 F.3d 742, 748, 754 (9th Cir. 2002) (applying Robins to a habeas corpus case in which the judgment was final in 1989); McKenna v. McDaniel, 65 F.3d 1483, 1489 (9th Cir. 1995) (reversing sentence based upon depravity aggravating circumstance for case in which the judgment was final in 1986 and citing Robins).

Most recently in Leslie v. Warden, 118 Nev. 773, 780, 59 P.3d 440, 445 (2002), this Court considered whether the aggravating circumstance of "random and without apparent motive" was constitutional when applied to a case where the sole basis was that the defendant unnecessarily killed someone in a robbery. Leslie was a habeas corpus proceeding and the Nevada Supreme court had affirmed the validity of the aggravating circumstance on direct appeal. Id. at 779, 59 P.3d at 444. The Court nonetheless

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

reconsidered the application of the aggravating circumstance because the refusal to do so would result in a fundamental miscarriage of justice. Id. at 780, 59 P.3d at 445. Likewise, in State v. Bennett, this Court applied Leslie retroactively to a petitioner whose conviction and sentence became final in 1990, see 119 Nev. 589, 81 P.3d 1, 6-8 (2003), and whose challenge to the same aggravating circumstances was rejected on direct appeal. See 106 Nev. 135, 143, 787 P.2d 797, 802 (1990). This Court did not discuss retroactivity in Leslie or Bennett when it applied a narrowing construction to aggravating circumstances in cases that were already final.

In McConnell, this Court followed the reasoning of the Tennessee Supreme Court in State v. Middlebrooks, 840 S.W.2d 317 (Tenn 1992) in concluding that felony-murder could not be used both as a theory of guilt and as an aggravating circumstance. McConnell, 102 P.3d at 620 n. 42. The retroactivity question at issue here was also considered by the Tennessee Supreme Court. In Barber v. State, 889 S.W.2d 185, 186 (Tenn. 1994), the state supreme court explained as follows:

> The State first argues that this Court's decision in Middlebrooks should not be retroactively applied to a case where the conviction became final long before the rule in Middlebrooks was announced. In State v. Meadows, 849 S.W.2d 748 (Tenn. 1993), authored by Justice Anderson, we departed from federal law on retroactivity and held that "a new state constitutional rule is to be retroactively applied to a claim for Post-conviction relief if the new rule materially enhances the integrity and reliability of the fact finding process of the trial." Id. at 755. We now hold that the rule in Middlebrooks materially enhances both the integrity and the reliability of the fact finding process in the sentencing phase of a capital trial and should therefore be applied retroactively.
>
> The constitutional concern in Middlebrooks was that the class of death-eligible murderers be narrowed so that only the worst offenders receive the death penalty. See Middlebrooks, 840 S.W.2d at 341-347. The court observed that the felony murder aggravating circumstance duplicates

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

the cri me of felony murder and thereby makes all felony murderers susceptible to the death penalty. This Court found that such a result violates the Eighth Amendment to the United States constitution, as well as Article I, Section 16 of the Tennessee Constitution. 840 S.W.2d 346. When an aggravating circumstance is improperly injected into the process by which the jurors must weigh aggravating and mitigating circumstances to determine a sentence, the integrity and reliability of the sentencing process is jeopardized because the death penalty may not be reserved for only the most culpable defendant. For this reason, we apply Middlebrooks retroactively under the Meadows rule.

Barber v. State, 889 S.W.2d 185, 186-87 (Tenn. 1994).

This Court also noted that the Wyoming Supreme Court reached the same decision as McConnell in Engberg v. Meyer, 820 P.2d 70 (Wyo.1991). McConnell, 102 P.3d at 620 n.42. Engberg was a post conviction case, yet the Wyoming court both announced and applied its holding that felony murder could not be used both as a basis for finding of guilt and as an aggravating circumstance. In fact, the same issue was presented to the Wyoming Supreme court in Engberg's direct appeal and the court at that time rejected the argument. Engberg v. State, 686 P.2d 541, 558-62 (Wyo. 1984). Nonetheless, the court found it appropriate to reconsider the earlier decision in light of subsequent developments in case law. Engberg, 820 P.2d 87. Thus, the two cases cited favorably in McConnell both apply the rule to post-conviction cases.

B. THE RESULT IN MCCONNELL WAS DICTATED BY LOWENFIELD V. PHELPS.

In McConnell, this Court recognized that it did not correctly apply Lowenfield v. Phelps in its earlier decisions. See McConnell, 102 P.3d at 620-21. In Lowenfield, the United States Supreme Court reemphasized that in order to "pass constitutional muster, a capital sentencing scheme must 'genuinely narrow the class of persons eligible for the

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

death penalty and must reasonably justify the imposition of a more severe sentence on the defendant compared to others found guilty of murder'" Lowenfield, 484 U.S. at 245 (citing Zant and Gregg). The Court then explained that the narrowing process could be performed through the use of aggravating circumstances or by narrowly defining the categories of murders for which a death sentence could be imposed. Id. Thus, the United States Supreme Court recognized and reaffirmed that a state's sentencing scheme must genuinely narrow the class of murders eligible for the death penalty; and that is the same constitutional principle that was analyzed in McConnell as the Court concluded that Nevada's scheme, which permitted a finding of guilt and imposition of the death penalty upon a single showing of felony- murder, did not sufficiently narrow the class of persons eligible for the death penalty. Lowenfield was issued by the United States Supreme court on March 7, 1988, before Mr. Rippo's sentence in this case became final. It is therefore fully applicable to this case. See Griffith v. Kentucky, 479 U.S. 314, 328 (1987).[1]

C. MCCONNELL MUST BE RETROACTIVELY APPLIED BECAUSE IT IS A SUBSTANTIVE RULE OF LAW.

McConnell must be applied retroactively because it is a substantive rule of law imposing a judicially-created narrowing definition on the felony murder aggravating

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[1] Mr. Rippo notes that the United States Supreme Court has observed that Lowenfield itself was not a new rule under the stringent non-retroactivity rules applicable in the context of federal habeas corpus proceedings. See Stringer v. Black, 503 U.S. 222, 232-34 (1992). Additionally, the Court announced Lowenfield in the context of a federal habeas corpus proceeding where new rules of constitutional law generally do not apply retroactively. The fact that the United States Supreme Court did not consider Lowenfield a new rule is consistent with Mr. Rippo's overarching position that it is simply not a new rule that aggravating circumstances must genuinely narrow the class of persons eligible for the death penalty.

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

circumstances. Unlike new rules of criminal procedure, new rules of substantive law are always applied retroactively on collateral review. See, e.g., Bousley v. United States, 523 U.S. 614, 620 (1998). In Bousley, the Court held that the new rule announced in Bailey v. United States, 516 U.S. 137, 144 (1995) (holding that § 924(c)(1)'s "use" prong requires the government to show "active employment of the firearm"), must be applied to cases on collateral review because the rule concerned the interpretation of a statute. Bousley, 523 U.S. at 620. As such, the rule concerned a substantive rule of criminal law, which are presumptively applied retroactively, and the non-retroactivity rule of Teague is not implicated. Bousely, 523 U.S. at 620 ("Teague by its terms applies only to procedural rules . . . [and] is inapplicable to the situation in which this Court decides the meaning of a statute enacted by Congress."); accord Schriro v. Summerlin, 542 U.S. 348, 351-352 (2004). The distinction between substantive rules of criminal law, which are always applied retroactively, versus rules of criminal procedure, which are subject to Teague, is a well-established principle of law.[2]

McConnell is a rule of substantive law because it "narrows the scope of a criminal

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[2] E.g., Davis v. United States, 417 U.S. 333, 346 (1974) (holding that a defendant may assert in a § 2255 proceeding a claim based on an intervening substantive change in the interpretation of a federal criminal statute); United States v. Benboe, 157 F.3d 1181, 1183 (9th Cir. 1998); Chambers v. United States, 22 F.3d 939, 942 (9th Cir. 1994); United States v. Sood, 969 F.2d 774, 775-76 (9th Cir. 1992); United States v. McClelland, 941 F.2d 999, 1000-01 (9th Cir. 1991); Santana-Madera v. United States, 260 F.3d 133, 139 (2d Cir. 2001); United States v. Lopez, 248 F.3d 427, 432 (5th Cir. 2001); United States v. McPhail, 112 F.3d 197, 199 (5th Cir. 1997); United States v. Brown, 117 F.3d 471, 479 (11th Cir. 1997); United States v. McKie, 73 F.3d 1149, 1153-54 (D.C. Cir. 1996); Ianniello v. United States, 10 F.3d 59, 63 (2d Cir. 1993); United States v. Guardino, 972 F.2d 682, 687 n.7 (6th Cir. 1992).

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

statute", see Summerlin, 542 U.S. at 351, by requiring furthering narrowing of the felony aggravators before Mr. Rippo is rendered death eligible. See also Id. at 354 ("a decision that modifies the elements of an offense is normally substantive rather than procedural.") Unlike the rule of Ring v. Arizona, 536 U.S. 584 (2002), which merely allocated decision making authority between judges and juries, see Summerlin, 542 U.S. at 353, McConnell imposes a substantive narrowing component when the state relies upon a felony murder theory in the guilt phase. By requiring further narrowing of the felony aggravators in the penalty phase, for example with a special verdict form indicating that the jury has found premeditation, this Court grafted an additional substantive element into the definition of the felony aggravators. Without such a finding, Mr. Rippo "faces a punishment that the law cannot impose upon him", see Summerlin, 542 U.S. at 352; therefore, McConnell must be applied retroactively as a substantive rule of law.

D. MCCONNELL IS RETROACTIVE UNDER THE ANALYSIS OF COLWELL V. STATE.

Returning to the framework announced by this Court in Colwell, it is clear that McConnell must be applied retroactively just as this Court has applied every other narrowing construction to an aggravating circumstance retroactivcly. The fact that this Court applied its holdings with respect to aggravating circumstances retroactively in Leslie, Bennett, Feazell, Haberstroh, and Browning without even mentioning it is telling. As explained above, this Court need not engage in a full retroactivity analysis because it is not a new rule that aggravating circumstances must genuinely narrow the class of death eligible defendants. Furthermore, as explained above, McConnell is a substantive rule of

law and is therefore automatically retroactive. However, even if it is considered a new rule of *criminal procedure*, McConnell fits comfortably within both Colwell exceptions to non-retroactivity.

McConnell prohibits "a certain category of punishment for a class of defendants because of their status or offense." Colwell, 59 P.3d at 470. For those defendants convicted under a felony murder theory in the guilt phase, their *status* prevents the state from seeking the death penalty using the same felony murder theory to justify the submission of those same aggravating circumstances to the jury. The state's argument that McConnell does not make it unlawful to prosecute those convicted of felony murder, see Ans. Br. at 14, misses the point. As this Court recognized in Colwell, the United States Supreme Court has recently held that it is unconstitutional to execute the mentally retarded. See Colwell, 59 P.3d at 470. The Court's decision in Atkins v. Virginia, 536 U.S. 304 (2002), does not hold that mentally retarded individuals cannot be prosecuted for murder. Rather, it is their status that prevents the infliction of a particular punishment, i.e., the death penalty. The same principles dictate that McConnell should apply retroactively here: Mr. Rippo's status as an individual convicted of first-degree murder using a felony murder theory prevents the state from using the robbery aggravating circumstance to render him eligible for a sentence of death. Therefore, Mr. Rippo is entitled to the retroactive application of McConnell under the first Colwell exception.

Mr. Rippo is undoubtedly entitled to the retroactive application of McConnell under the second Colwell exception because "accuracy is seriously diminished without the rule." Colwell, 59 P.3d at 472. It is axiomatic that *accuracy* in the context of a capital sentencing

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

proceeding requires that the sentencing scheme genuinely narrow the class of death eligible defendants. McConnell is the quintessential example of such a rule because it is based "on a perceived need to enhance accuracy in capital sentencings." Colwell, 59 P.3d at 473. As this Court noted in McConnell, "it is clear that Nevada's definition of felony murder does not afford constitutional narrowing" and "the felony aggravator fails to genuinely narrow the death eligibility of felony murderers and reasonably justify imposing death on all defendants to whom it applies." McConnell, 102 P.3d at 622, 624. This Court's decision in McConnell is the most important narrowing construction ever applied to the state's capital sentencing scheme since Furman for two reasons: (1) the felony aggravator contains seven qualifying felonies, see McConnell, 102 P.3d at 623-24, instead of one[3]; and (2) the felony aggravator fails to contain an adequate narrowing based on the defendant's mental state. See id. Therefore, it is inescapable that the felony murder aggravator is the most unconfined and overly broad part of the state sentencing scheme. In comparison, this Court's rulings in Leslie, Bennett, Haberstroh, Browning, and Feazell did not have nearly the far reaching application as McConnell since they only concerned single aggravating circumstances, and this Court did not even mention retroactivity in those cases.

The state may argue that a rule that could be found to be harmless error can never be held retroactive, but that very argument has been rejected in the context of federal

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[3] As this Court noted in McConnell, Nev. Rev. Stat. § 200.033(4) includes five felonies and Nev. Rev. Stat. § 200.033(13) adds first-degree murders committed during the commission of a sexual assault or sexual abuse of a child. See 102 P.3d at 623.

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

habeas corpus proceedings where the stringent Teague v. Lane, 489 U.S. 288 (1989) standard applies. See Bockting v. Bayer, 399 F.3d 1010, 1020 (9th Cir.) (rejecting argument that "rules of constitutional law subject to harmless error review can never be considered bedrock rules of procedure"), amended on denial of rehearing, 408 F.3d 1127 (9th Cir. 2005). Unlike the narrower federal habeas standard, it is much easier to understand that a constitutional rule can be harmless error and at the same time qualify as a rule without which the accuracy of the proceedings are seriously diminished in state habeas proceedings. In summary, it is apparent that this Court's decision in McConnell increases the accuracy of capital sentencing proceedings to such an extent that it should be considered retroactive under Colwell.

E. THE IMPROPER AND UNCONSTITUTIONAL AGGRAVATING CIRCUMSTANCE IS NOT HARMLESS ERROR.

The State may argue that Lowenfield-McConnell should not be applied here because the state argued at trial that Mr. Rippo was guilty under both premeditation and felony-murder theories. The jury was not given a special verdict form, however, and it is therefore impossible to know whether all of the jurors found Mr. Rippo guilty under a theory of premeditation and deliberation. Both theories were presented and argued to the jury, the jury was instructed on both theories, and it is certainly possible that the jury could have based its decision upon this theory. Unlike the defendant in McConnell, Mr. Rippo did not plead guilty to premeditated murder and has never stated that he committed any offense with premeditation and deliberation. Cf. McConnell, 102 P.3d at 620 (finding harmless error when defendant pleaded guilty and stated in his plea hearing that "[n]othing

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

justifies cold-blooded, premeditated, first-degree murder, which is what I did.").

Nevada is a "weighing" state, i.e., a state in which the existence of an aggravating factor is a necessary predicate to death eligibility, and in which the ultimate sentencing decision turns on the weighing of statutory aggravating factors against the mitigating evidence. In a weighing state where the aggravating and mitigating circumstances are balanced against each other, it is constitutional error for the sentence to give weight to an unconstitutional factor, even if other valid factors remain. Accordingly, Mr. Rippo's sentence of death must be vacated.

CONCLUSION

Based on the foregoing Mr. Rippo would respectfully request that this Court reverse his convictions based on violations of the Fifth, Sixth, and Fourteenth Amendments to the United States Constitution.

DATED this 12 day of December 2005.

Respectfully submitted by:

CHRISTOPHER R. ORAM, ESQ.
Nevada Bar No. 004349
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101
Attorney for Appellant

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CERTIFICATE OF COMPLIANCE

I hereby certify that I have read this appellate brief, and to the best of my knowledge, information, and belief, it is not frivolous or interposed for any improper purpose. I further certify that this brief complies with all applicable Nevada Rules of Appellate Procedure, in particular NRAP 28(e), which requires every assertion in the brief regarding matters in the record to be supported by appropriate references to the record on appeal. I understand that I may be subject to sanctions in the event that the accompanying brief is not in conformity with the requirements of the Nevada Rules of Appellate Procedure.

DATED this 9 day of December, 2005.

Respectfully submitted by,

CHRISTOPHER R. ORAM, ESQ.
Nevada Bar No. 004349
520 S. Fourth Street, 2nd Floor
Las Vegas, Nevada 89101
(702) 384-5563
Attorney for Appellant

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

CERTIFICATE OF MAILING

I hereby certify that I am an employee of CHRISTOPHER R. ORAM, ESQ., and that on the 12 day of December, 2005, I did deposit in the United States Post Office, at Las Vegas, Nevada, in a sealed envelope with postage fully pre-paid thereon, a true and correct copy of the above and foregoing **APPELLANT'S SUPPLEMENTAL BRIEF**, addressed to:

David Roger
District Attorney
200 S. Third Street, 7th Floor
Las Vegas, Nevada 89155

Brian Sandoval
Attorney General
100 North Carson Street
Carson City, Nevada 89701-4717

Simone Miyazato
An employee of Christopher R. Oram, Esq.

CHRISTOPHER R. ORAM
520 South Fourth Street, Second Floor
Las Vegas, Nevada 89101

EXH

FRANNY A. FORSMAN
Federal Public Defender
State Bar No. 0014
GARY A. TAYLOR
Assistant Federal Public Defender
Nevada Bar No. 11031C
NISHA N. BROOKS
Assistant Federal Public Defender
Nevada Bar No. 11032C
411 East Bonneville Avenue, Suite 250
Las Vegas, NV 89101
Phone: (702) 388-6577
Fax: (702) 388-5819

Attorneys for Petitioner

DISTRICT COURT

CLARK COUNTY, NEVADA

WILLIAM P. CASTILLO, Petitioner, vs. E. K. McDANIEL, Warden, and CATHERINE CORTEZ MASTO, Attorney General of the State of Nevada, Respondents.	Case No. C133336 Dept. No. XVIII **EXHIBITS TO PETITION FOR WRIT OF HABEAS CORPUS** (Death Penalty Habeas Corpus Case)

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EXH
FRANNY A. FORSMAN
Federal Public Defender
State Bar No. 0014
GARY A. TAYLOR
Assistant Federal Public Defender
Nevada Bar No. 11031C
NISHA N. BROOKS
Assistant Federal Public Defender
Nevada Bar No. 11032C
411 East Bonneville Avenue, Suite 250
Las Vegas, NV 89101
Phone: (702) 388-6577
Fax: (702) 388-5819

Attorneys for Petitioner

DISTRICT COURT

CLARK COUNTY, NEVADA

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Exhibit No.	Description
1.	Judgment of Conviction, State v. Castillo, Clark County, Case No. C133336, November 12, 1996
2.	Indictment, State v. Castillo, Clark County, Case No. C133336, January 19, 1996
3.	Order of Appointment of Counsel, State v. Castillo, Clark County, Case No. C133336, March 14, 1996
4.	Amended Indictment, State v. Castillo, Clark County, Case No. C133336, May 29, 1996
5.	Special Verdict, State v. Castillo, Clark County, Case No. C133336, September 25, 1996

6. Special Verdict, State v. Castillo, Clark County, Case No. C133336, September 25, 1996

7. Verdict, State v. Castillo, Clark County, Case No. C133336, September 25, 1996

8. Guilty Plea Agreement, State v. Michele C. Platou, Clark County, Case No. C133336, September 26, 1996

9. Notice of Appeal, State v. Castillo, Clark County, Case No. C133336, November 4, 1996

10. Appellant's Opening Brief, Castillo v. State, Nevada Supreme Court, Case No. 29512, March 12, 1997

11. Appellant's Reply Brief, Castillo v. State, Nevada Supreme Court, Case No. 29512, May 2, 1997

12. Petition for Rehearing, Castillo v. State, Nevada Supreme Court, Case No. 29512, August 21, 1998

13. Order Denying Rehearing, Castillo v. State, Nevada Supreme Court, Case No. 29512, November 25, 1998

14. Petition for Writ of Habeas Corpus, Castillo v. State, Clark County, Case No. C133336, April 2, 1999

15. Opinion, Castillo v. State, Nevada Supreme Court, Case No. 29512, April 2, 1998

16. Supplemental Brief In Support of Defendant's Petition for Writ of Habeas Corpus (Post-Conviction), Castillo v. State, Clark County, Case No. C133336, October 12, 2001

17. Notice of Appeal, Castillo v. State, Clark County, Case No. C133336, February 19, 2003

18. Findings of Fact, Conclusions of Law and Order, Castillo v. State, Clark County, Case No. C133336, June 11, 2003

19. Appellant's Opening Brief, Castillo v. State, Nevada Supreme Court, Case No. 40982, October 2, 2003

20. Order of Affirmance, Castillo v. State, Nevada Supreme Court, Case No. 40982, February 5, 2004

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21. Notice of Intent to Seek Indictment, LVMPD Event No. 951217-0254, December 26, 1996

22. Notice of Intent to Seek Death Penalty, State v. Castillo, Clark County, Case No. C133336, January 23, 1996

23. Instructions to the Jury, State v. Castillo, Clark County, Case No. C133336, September 4, 1996

24. Verdict, State v. Castillo, Clark County, Case No. C133336, September 4, 1996

25. Instructions to the Jury, State v. Castillo, Clark County, Case No. C133336, September 25, 1996

26. Lewis M. Etcoff, Psychological Evaluation, July 14, 1996

27. Declaration of Herbert Duzant

28. Declaration of Joe Castillo

29. Declaration of Barbara Wickham

30. Declaration of Regina Albert

31. Declaration of Cecilia Boyles

32. Declaration of Ramona Gavan-Kennedy

33. Declaration of Michael Thorpe

34. Declaration of Yolanda Norris

35. Declaration of Lora Brawley

36. Evaluation Report by Rebekah G. Bradley, Ph.D.

37. Curriculum Vitae of Rebekah G. Bradley, Ph.D.

38. Confidential Forensic Report by Jonathan H. Mack, Psy.D.

39. Curriculum Vitae of Jonathan H. Mack, Psy.D.

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40. Declaration of Kelly Lynn Lea

41. Declaration of Dale Eric Murrell

42. Declaration of Lewis M. Etcoff, Ph.D.

43. Declaration of Mary Kate Knowles

44. Declaration of Herbert Duzant

45. David M. Schieck, Esq. Client Billing Worksheet (2/29/96-11/4/96)

46. Affidavit of Vital Statistics, Barbara Margaret Thorpe v. William Patrick Thorpe, Sr., State of Missouri, County of St. Louis, September 14, 1973

47. William P. Thorpe, Sr. Missouri Department of Corrections with Fulton State Hospital records

48. Catholic Services for Children and Youth, Catholic Charities, Archdiocese of St. Louis, records of Max Allen Becker, Yolanda Becker, and Barbara Becker, children of Allegria Dehry-Becker and Robert Becker

49. Divorce proceedings, Barbara Castillo v. Joe Castillo, Clark County, Nevada, Case No. D121396

50. Charles Sarkison, Attorney at Law, records of representation of Barbara M. Wickham, formerly, Barbara Becker-Thorpe-Castillo-Sullivan:

- Custodial proceedings regarding William Patrick Thorpe, Jr. (now William Patrick Castillo), pages 2-25
- Divorce proceedings regarding William Patrick Thorpe, Sr., pages 26-48
- Personal injury lawsuit for accident on 4/10/74, pages 49-69

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51. Missouri Certification of Death, William P. Thorpe, Sr. (Date of Death: July 17, 1984)

52. Missouri Criminal Court records Re: William Patrick Thorpe, Sr.

53. Arturo R. Longoro, M.D. - Medical records of Yolanda Norris, formerly Yolanda Becker

54. Lewis M. Etcoff, Ph.D. records Re: William Patrick Castillo

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55. Order for Adoption, In the Matter of the Adoptive Petition of Joe L. Castillo and Barbara Castillo, Clark County, Nevada, Case No. D40017, January 15, 1982

56. St. Louis Post-Dispatch, news article "Police Keeping Their Eyes Peeled At New Downtown Massage Parlor," September 19, 1976

57. St. Louis Globe-Democrat news article, "His home is a prison cell and his life is a waste," November 7, 1973

58. Children's Hospital of St. Louis medical records on William P. Thorpe, Jr.

59. Oasis Treatment records, 6/9/81-9/11/81

60. Coordinator's Contact Record, 9/14/81-12/15/81

61. Confidential Psychological Evaluation, performed May 24, 1982

62. Las Vegas Mental Health Center, Psychiatric Evaluation, dated July 7, 1982

63. Abandonment proceedings, In the Interest of William P. Thorpe, Jr., Family Court of St. Louis, Case No. 56644

64. State of Nevada, Department of Human Resources, Division of Child and Family Services, Child Abuse reports

65. Nevada Youth Training Center Records

66. Catholic Services for Children and Youth, Catholic Charities, Archdiocese of St. Louis, records of William P. Thorpe, Jr.

67. Independence High School records of William Patrick Castillo

68. Missouri Baptist Hospital, medical records of Barbara M. Thorpe, 8/11/76

69. State of Nevada Children's Behavorial Heath Services records of William Patrick Castillo (formerly William Patrick Thorpe, Jr.)

70. Castillo Family Video Recordings: 12/25/1983, 12/28/83 (William P. Castillo's birthday), 12/24/84, 12/25/84, 12/28/84 (William P. Castillo's birthday) - MANUALLY FILED

71. Acadia Neuro-Behavioral Center, P.A., Richard Douyon, M.D. records of Yolanda Norris (formerly Yolanda Becker)

72. News article, "Police hunt Florissant gang members"

73. William P. Castillo's family tree

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74. Historical View, Life of William Castillo

75. State of Nevada Department of Health and Human Services Health Division letter dated May 11, 2008

76. Las Vegas Metropolitan Police Department Detention Bureau Record of Visitors
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77. Ely State Prison Visiting Record 1997-2008

78. Jeffrey Fagan, Deterrence and the Death Penalty: A Critical Review of New Evidence, January 21, 2005, at http://www.deathpenaltyinfo.org

79. Juvenile Division, In the Matter of William P. Castillo aka William P. Thorpe, Clark County, Nevada, Case No. J26174

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- Parents Treatment Agreement, July 30, 1982, pgs. 2-3
- Reporter's Transcript of Hearing in Re: Report and Disposition, July 29, 1982, pgs. 4-9
- Transcript of Proceedings, Report and Disposition, December 7, 1982,