

IN THE SUPREME COURT OF FLORIDA

CASE NOS. 95,959; 95,973

THOMAS PROVENZANO, MILFORD BYRD, EDUARDO LOPEZ,
MCARTHUR BREEDLOVE, JERRY HALIBURTON,
GREGORY KOKAL, AND TOMMY GROOVER,

Petitioners/Appellants,

v.

MICHAEL MOORE, ET. AL.,

Respondents/Appellees.

ORIGINAL PROCEEDING -- ALL WRITS

INITIAL BRIEF OF PETITIONERS/APPELLANTS

MARTIN J. MCCLAIN
Florida Bar No. 0754773
Special Assistant CCRC

TODD G. SCHER
Florida Bar No. 0899641
Litigation Director
CAPITAL COLLATERAL REGIONAL
COUNSEL-SOUTH
1444 Biscayne Boulevard
Suite 202
Miami, FL 33132-1422
(305) 377-7580

ANDREW THOMAS
Florida Bar No. 0317942
Chief Assistant CCRC

GAIL E. ANDERSON
Florida Bar No. 0841544
Special Assistant CCRC
CAPITAL COLLATERAL REGIONAL
COUNSEL-NORTH
1533-B South Monroe Street
Tallahassee, FL 32301
(850) 488-7200

HARRY P. BRODY
Florida Bar No. 0977860
Assistant CCRC-Middle

JEFFREY M. HAZEN
Florida Bar No. 053060
CCRC-Middle Attorney

JOHN P. ABATECOLA
Florida Bar No. 0112887
CCRC-Middle Attorney
CAPITAL COLLATERAL REGIONAL
COUNSEL-MIDDLE
3801 Corporex Park Drive
Suite 210
Tampa, FL 33619
(813) 740-3544

COUNSEL FOR PETITIONERS/
APPELLANTS

PRELIMINARY STATEMENT

This proceeding involves the appeal of the circuit court's order denying Petitioners' claim that judicial electrocution in Florida's electric chair is cruel or unusual punishment.

The following symbols will be used to designate references to the record in this appeal:

"T. ___" -- the eight-volume transcript of the evidentiary hearing conducted in the lower court, which is consecutively paginated;

Exhibits introduced below will be referred to as "Pet. Ex. ___" or "Resp. Ex. ___".

TABLE OF CONTENTS

| | <u>Page</u> |
|--|-------------|
| PRELIMINARY STATEMENT | i |
| TABLE OF CONTENTS | ii |
| TABLE OF AUTHORITIES | iv |
| INTRODUCTORY STATEMENT | 1 |
| STATEMENT OF THE CASE AND FACTS | 2 |
| A. FACTS REGARDING THE PROTOCOL | 3 |
| B. FACTS REGARDING SECURING THE CONDEMNED PERSON TO THE CHAIR AND ELECTRICAL CIRCUITRY | 8 |
| C. WITNESS OBSERVATIONS OF THE CONDEMNED DURING EXECUTION | 18 |
| 1. The Execution of Allen Davis | 18 |
| 2. The Execution of Jesse Tafero | 21 |
| 3. The Execution of Jerry White | 22 |
| 4. The Execution of Pedro Medina | 23 |
| 5. The Execution of Leo Jones | 24 |
| 6. The Execution of Judias Buenoano | 25 |
| 7. The Georgia Execution of Alpha Otis Stephens | 26 |
| D. EXPERT PATHOLOGIST TESTIMONY REGARDING THE DAVIS EXECUTION | 26 |
| E. FACTS REGARDING PAIN IN THE EXECUTION OF ALLEN DAVIS | 36 |
| F. FACTS REGARDING WHETHER OR NOT JUDICIAL ELECTROCUTION CAUSES INSTANTANEOUS UNCONSCIOUSNESS AND DEATH | 40 |
| 1. Background Data and Scientific Principles | 42 |

| | | |
|-------------|---|----|
| a. | Facts Regarding Survivors of Electrical Trauma | 42 |
| b. | Scientific Principles Regarding Electricity's Effects on Biological Systems | 45 |
| 2. | Expert Testimony Regarding The Presence of Conscious Pain During a Judicial Electrocution | 49 |
| a. | Petitioner's Witnesses | 49 |
| b. | Respondent's Witnesses | 56 |
| ARGUMENT | | 62 |
| ARGUMENT I | | |
| | FLORIDA'S ELECTRIC CHAIR AS USED BY THE DEPARTMENT OF CORRECTIONS CONSTITUTES CRUEL AND/OR UNUSUAL PUNISHMENT WITHIN THE MEANING OF THE FLORIDA AND THE UNITED STATES CONSTITUTIONS | 62 |
| A. | INTRODUCTION | 62 |
| B. | PAIN | 67 |
| 1. | Prior to application of electrical current | 67 |
| 2. | Pain during the passage of electrical current | 72 |
| C. | ELECTRICAL APPARATUS | 77 |
| D. | PROTOCOL | 78 |
| 1. | Language prescribing voltage and amperage | 78 |
| 2. | Tightness of straps not addressed in protocol | 82 |
| 3. | Placement of head electrode | 83 |
| 4. | Ignorance of protocol | 84 |
| E. | COURSE OF CONDUCT | 86 |
| F. | CONCLUSION | 90 |
| ARGUMENT II | | |

| | |
|---|-----|
| FLORIDA'S CURRENT USE OF JUDICIAL ELECTROCUTION AS ITS SOLE METHOD OF EXECUTION IS UNCONSTITUTIONAL BECAUSE IT VIOLATES THE EVOLVING STANDARDS OF DECENCY THAT MARK THE PROGRESS OF A MATURING SOCIETY | 90 |
| ARGUMENT III | |
| THE LOWER COURT MADE NUMEROUS ERRONEOUS EVIDENTIARY RULINGS THAT CUMULATIVELY DENIED A FULL AND FAIR HEARING | 94 |
| A. PRECLUSION OF WITNESSES | 94 |
| 1. Thomas Crapps | 94 |
| 2. Richard Martell | 96 |
| B. PRECLUSION OF TESTIMONY | 97 |
| C. PRECLUSION OF CROSS-EXAMINATION | 98 |
| ARGUMENT IV | |
| THE LOWER COURT ERRED WHEN IT STRUCK PETITIONERS MILFORD WADE BYRD, EDUARDO LOPEZ, MCARTHUR BREEDLOVE, JERRY HALIBURTON, GREGORY KOKAL, AND TOMMY GROOVER FROM THE AMENDED PETITION | 99 |
| CONCLUSION | 100 |

TABLE OF AUTHORITIES

| | <u>Page</u> |
|--|-------------|
| <u>Brennan v. State,</u> No. 90,279, slip op. (Fla. July 8, 1999) | 92 |
| <u>Brown v. Wainwright,</u> 392 So.2d 1327 (1981) | 99 |
| <u>Coker v. Georgia,</u> 433 U.S. 584 (1977) | 93 |
| <u>Davis v. Alaska,</u> 415 U.S. 308 (1974) | 99 |
| <u>Downs v. State,</u> 574 So. 2d 1095 (Fla. 1991) | 98 |
| <u>Enmund v. Florida,</u> 458 U.S. 782 (1982) | 93 |
| <u>Estelle v. Gamble,</u> 429 U.S. 97 (1976) | 92 |
| <u>Hudson v. McMillan,</u> 503 U.S. 1 (1992) | 92 |
| <u>Jones v. State,</u> 701 So.2d 76 (Fla. 1997) | 63 |
| <u>McCleskey v. Kemp,</u> 481 U.S. 279 (1987) | 93 |
| <u>Pacifico v. State,</u> 642 So. 2d 1178 (Fla.App. 1 Dist. 1994) | 98 |
| <u>Pender v. State,</u> 432 So. 2d 800 (Fla. 1st DCA 1983) | 98 |
| <u>Penry v. Lynaugh,</u> 492 U.S. 302 (1989) | 92 |
| <u>Provenzano v. State,</u> ____ So. 2d ____, 1999 WL 462600 (Fla. July 1, 1999) | 62 |
| <u>Remeta v. Singletary,</u> | |

| | |
|---|----|
| No. 92,679 (Fla. March 30, 1998) | 64 |
| <u>Rhodes v. Chapman,</u> 452 U.S. 337 (1981) | 92 |
| <u>Scott v. State,</u> 717 So. 2d 908 (Fla. 1998) | 96 |
| <u>Stanford v. Kentucky,</u> 492 U.S. 361 (1989) | 92 |
| <u>State v. Weir,</u> 569 So. 2d 897 (Fla. 4th DCA 1990) | 97 |
| <u>Thompson v. Oklahoma,</u> 487 U.S. 815 (1988) | 93 |
| <u>Trop v. Dulles,</u> 356 U.S. 86 (1958) | 92 |
| <u>Weems v. United States,</u> 217 U.S. 349 (1910) | 92 |
| <u>Weir v. State,</u> 591 So. 2d 593 (Fla. 1991) | 97 |

INTRODUCTORY STATEMENT

Respondent below acknowledged that changes were required in the execution procedures. The last witness called by Respondent was Warden Crosby, who analogized the carrying out of an execution to "a spaceship launch" (T.1333). Respondent elicited the following testimony:

Q Now, Warden Crosby, there has been some testimony that one member of the execution team observed a couple of bubbles of blood in the inmate's left nostril some short, short time apparently before the switch was thrown. Were you aware of that?

A That's the first I ever heard of that.

Q Does that create any concerns in your mind?

A Yes, it does. If they knew, they should have told me that.

Q What - let me ask you this. Do you expect to - knowing that now, I recognize that you know. I just, you know, said something to you that you haven't heard about before, but if you want to think about that for a minute, couple of seconds here, did that call to mind or bring to mind anything that you will do or make known to your staff for the future?

A I have - I don't have to think a couple of seconds. When I leave here, we have got a problem.

Q Are you going to fix that problem, sir?

A Oh, yes, sir. I'm going to find out where the problem was, first. We're going to fix it. That's a concern.

(T.1338-39).

In his closing argument in circuit court, Assistant Attorney General Ken Nunnelley acknowledged Warden Crosby's assessment

that there was a problem that needed to be fixed:

Warden Crosby is staying on top of this.¹ He's obviously concerned. He's obviously very committed, from his testimony I would submit, to do his job and his duty in a professional, competent fashion that complies with the laws of the State of Florida and the laws of the United states. He has done everything he can.

I think from the Court's - from the testimony the Court heard this afternoon, I think he went out of this courtroom going to make some changes or going to start talking about things maybe he does need to think about.

About he also said, Judge, we've never had blood before. And he kind of - in all honesty, he said, Thomas - I would have expected Thomas to have told by [sic] about the blood, the little bubbles of blood in the nostril, but Thomas may not have known what to do. But I can pretty well tell you they'll know what to do next time.

(T.1402-03).

No evidence was presented of what changes are to be made and when. Respondent's position was simply that Warden Crosby should be trusted to make appropriate changes at some point which will comply with the Florida and United States Constitutions.

In this brief, counsel have endeavored to explain to this Court why DOC cannot simply be trusted to fix the problems identified below at some unknown time and why the lower court's conclusions are contrary to the facts and law.

¹However, Warden Crosby did not learn until he was called to the witness stand as the last witness in a four day hearing conducted some three weeks after the execution that a member of the execution team observed the nose bleeding before the electrocution began and did nothing. This does not sound like "staying on top of this."

STATEMENT OF THE CASE AND FACTS

This Court ordered an evidentiary hearing on Petitioner's all writs petition and any amendment thereto. Petitioner amended the petition, and the lower court held an evidentiary hearing.

A. FACTS REGARDING THE PROTOCOL

James Crosby, warden of Florida State Prison, first presided over a judicial electrocution in March 1998 (T.1331). Crosby is familiar with "Execution Day Procedures" and "Testing Procedures for Electric Chair" (T.1340-41; Pet. Exs. 8, 9). He has made no changes to them (T.1332). He did, however,

have a very lengthy discussion about the protocols with our legal staff, with the attorney general's office, and with some electrical engineers, and with management staff about something that I looked at, that upon immediate reading, I wasn't for sure why something that happened on the chart I got to do with the execution, didn't match what was the language of the protocols.

It was a matter of semantics. That ended up being a matter of semantics, and the way I was reading it versus the way it was intended it was written.

(T.1344). This discussion concerned the language in the protocols regarding voltage and amperage during an execution

(T.1344). After the four executions in March 1998, Crosby noticed that "[w]hat was showing on the chart recording was not the . . . numbers that I was reading in the protocol" and he "certainly had a question about it" (T.1344-45).

Crosby remembers drafting a document similar to Petitioner's Exhibit 24, Number 66 and discussing it with the Secretary and

legal staff (T.1345). When Crosby "discussed it with them, I understood what they meant here, which was different from what I was understanding what would happen on the chart recorders" (T.1346). Specifically, Crosby discussed "the proposed language change with Whitlock, and I remember him agreeing that that change would be accurate; that if we said that, that that would be an accurate rendering" (T.1347).

Crosby drafted Petitioner's Exhibit 24, Number 66 because "I had a concern about the meter readings that were chart recorded not matching what I was reading here. I've been given orders by the courts on the last, I think, execution, to follow the protocol" (T.1349-50). Crosby elaborated:

Now when we ran the tests, the tests showed those numbers. When we did the execution, the chart did not show those numbers. As a lay person, I was concerned about those numbers not matching. What I was misreading, after we met, was the preprogrammed concept.

I had not understood that while something is preprogrammed, what it measured when it happens is not going to be one and the same. Therefore, it was determined by all those folks that it was a matter of semantics, and I understood it finally that it was a matter of semantics.

(T.1350).

After the document was drafted, Crosby had a meeting with attorneys, two electrical engineers, the Corrections Secretary

and members of the execution staff (T.1351).² The purpose of the meeting "was primarily there for me to feel comfortable with the language of the protocol" (T.1352).

During the meeting, "There became a consensus that the language would work, I believe. . . . I think I found out two or three days later that it was decided that the language was appropriate" (T.1352-53). DOC General Counsel Lou Vargas informed Crosby that the decision not to change the protocol had been made (T.1353).

The "Execution Day Procedures" state: "The automatic cycle begins with the programmed 2,300 volts, 9.5 amps, for 8 seconds; 1,000 volts, 4 amps for 22 seconds; and 2,300 volts, 9.5 amps for 8 seconds" (Pet. Ex. 8). The evidence showed the voltage, amperage and resistance in the last five executions:

| <u>Name</u> | <u>Cycle</u> | <u>Voltage</u> | <u>Amperage</u> | <u>Resistance</u> (in ohms) |
|-------------|--------------|----------------|-----------------|--------------------------------|
| Buenoano | 1 | 2000 | 9.4 | 212.8 |
| | 2 | 650 | 2.9 | 224.1 |
| | 3 | 1900 | 9.4 | 202.1 |
| Stano | 1 | 1600 | 9.1 | 175.8 |
| | 2 | 550 | 2.9 | 189.7 |
| | 3 | 1500 | 9.0 | 166.7 |
| Jones | 1 | 1600 | 9.1 | 175.8 |
| | 2 | 500 | 2.9 | 172.4 |

²Among the attorneys present were Ken Nunnelley of the Attorney General's office and Susan Schwartz from the Department of Corrections (T. 1352). Mr. Crosby believes Tom Crapps from the governor's office was there (T. 1352), and believes Jay Weichert participated by telephone (T. 1354).

| | | | | |
|--------|---|------|------|-------|
| | 3 | 1450 | 9.2 | 157.6 |
| Remeta | 1 | 2100 | 9.2 | 228.3 |
| | 2 | 675 | 2.9 | 232.8 |
| | 3 | 1850 | 8.9 | 208.9 |
| Davis | 1 | 1500 | 10.0 | 150.0 |
| | 2 | 600 | 4.5 | 133.0 |
| | 3 | 1500 | 10.0 | 144.0 |

(Pet. Ex. 31; T. 1257-62, 1268-69, 1277-79, 1281-83 (Hallman); Resp. Ex. 16). Electrical engineer Robert Hallman testified that 2.9 amperes in the second phase of the cycle is 73% of the 4.0 amperes in the protocol (T.1279). The 650 volts delivered in the second phase of the Buenoano cycle is 65% of the 1000 volts in the protocol (T.1280-81). The voltage in all phases and the amperage in the second phase of the cycle for the Jones, Davis, Remeta and Stano executions is below the voltage and amperage prescribed in the protocol (T.1283).

State witness Jay Wiechert, an electrical engineer, examined the "Execution Day Procedures" (Pet. Ex. 8) and testified he had examined these procedures in 1997 (T.942). Wiechert testified he has "taken issue about having hard fixed numbers in that protocol" because "[t]he resistor load that we measure in ohms will dictate the relationship between volts and amps" (T.943). Wiechert explained that the protocol cannot "specify both volts and amps because the resistive load, the size of the inmate, will determine this relationship between volts and amps" (T.943). Therefore, Wiechert testified, "[t]he numbers that are specified

in that protocol that you have are average numbers. . . . But as the size of an inmate varies, those numbers will vary" (T.943). According to Wiechert, the protocol "is not well written. We cannot specify both volts and amps. . . . [I]t is unfortunate that protocol is written the way it is" (T.983). Wiechert testified that in writing the protocol, "[W]e made a mistake from the beginning trying to be too technical" and "we really need to rewrite that" (T.984). There "isn't a simple answer" regarding what the voltage and amperage readings will be during any one execution (T.987).³

Weichert agreed that the voltage and amperage measured during the Davis execution were not what is provided for in the "Execution Day Procedures" (T.967). The voltage in the second cycle of the Davis execution was 600 volts, about 60% of the voltage specified in the protocol (T.979-80).

Ira Whitlock, an electrical engineer contracted by DOC to maintain and repair the electric chair circuitry, testified that the protocol language regarding voltage and amperage delivered during an execution "probably misrepresents the intended function of the equipment based on its design" (T.1242-43). The statement

³ The voltage and amperage in the protocol assume a resistance of 242 ohms (T.944). The resistance load used to test the electrical circuitry of the Florida electric chair provides 250 ohms, which Wiechert assumes to be the resistance of a typical inmate (T.973). Wiechert had not examined the last five executions and determined the amount of resistance in those executions, except for the Davis execution (T.974-75).

regarding voltage and amperage is correct only if the resistance of the condemned is 260 ohms (T.1243). Whitlock advised Susan Schwartz and Tom Crapps that the protocol's language regarding voltage and amperage should be changed because "it could be erroneous" (T.1244-45). Whitlock was not asked to submit a proposal for changing the language because Ms. Schwartz and Crapps "didn't want me to recommend a change in the language" (T.1245). Whitlock emphasized, "I disagreed with the language of the protocol. The language of the protocol evidently was written by a lay person, not an engineer not familiar with it. So it is going to be erroneous by its own nature" (T.1250).

The "Execution Day Procedures" require that a chart recorder measure voltage and amperage during an execution (Pet. Ex. 8; T. 403 (McNeill)). A new chart recorder was installed after March 1998 and was first used in Davis's execution (T.362-63, 1355). Ira Whitlock had recommended replacing the chart recorder in May 1997 (Pet. Ex. 10; T. 1241). The old chart recorder was not inaccurate (T.1265-66 (Hallman)), but was replaced because a newer model was available (T.1357 (Crosby)).

The "Testing Procedures for Electric Chair" require, "If any equipment or material is found to be damaged, worn or faulty, it shall be replaced" (Pet. Ex. 9). In 1998, Wiechert recommended replacing the head electrode (T.980-81; Pet. Ex. 20). This has not been done.

B. FACTS REGARDING SECURING THE CONDEMNED PERSON TO THE CHAIR AND ELECTRICAL CIRCUITRY

Robert Thomas, assistant maintenance superintendent at Florida State Prison, has been involved in about 15 executions since 1992 (T.306). John McNeill, utility supervisor at Florida State Prison, is involved in carrying out executions (T.345). During an execution, Thomas, McNeill and Hackle are responsible for strapping the condemned to the electric chair (T.313; 351). These three have had this assignment since May, 1992 (T.313). A.D. Thornton, assistant warden of Florida State Prison, also has duties in connection with carrying out an execution and is in the execution chamber during an electrocution (T.810).

Thomas, McNeill and Hackle are each responsible for specific straps (T.314, 351). The straps are placed pursuant to the protocol (T.822). Thomas is at the left side, McNeill is at the right side and Hackle is behind the condemned (T.315-16). Thomas testified that after the condemned person is seated in the electric chair, Thomas hands the waist and chest strap buckles to Hackle, who tightens them to the point they will not go any further (T.315). McNeill testified that when he tightens the waist strap, "Different body sizes determine[]" how tight he makes the strap: "You can't just do it one certain way. You can tell when you strap down the body" (T.351-52). In Davis's execution, McNeill tightened the waist strap, then the chest strap, and then had to retighten the waist strap "because the fat

had rolled over and kind of made the strap come loose so I had to restrap the other strap" (T.352).

Thomas affixes straps on the left arm, while McNeill affixes straps on the right arm (T.315-16, 350). Each man himself determines how tight to affix the straps (T.316). Thomas is supposed to affix the straps "[a]s tight as I can get them" (T.316). The "Execution Day Procedures" do not specify how tightly the straps should be affixed (Pet. Ex. 8).

McNeill places a sponge on the calfpiece (or leg electrode) and holds the calfpiece on the right calf while Thornton and Hackle strap it onto the leg (T.350, 353). McNeill then checks all the straps he affixed to "make sure they're tight and snug" and goes into an anteroom with the executioner (T.353-54).

Thomas then assists in placing the mouth strap (T.316).⁴ Petitioner's Exhibit 5 is the mouth strap used in a series of executions, including Davis's (T.316-17, 349, 830). The mouth strap holds the chin and head in place by buckling it around two posts in the back of the chair (T.317-18). Thomas holds the mouth strap in place while Hackle latches it behind the chair (T.318). Hackle decides how tight to fasten the strap (T.318). In Davis's execution, Hackle pulled the mouth strap "tight"

⁴Throughout the evidentiary hearing, witnesses referred to Petitioner's Exhibit 5 as either the mouthpiece, mouth strap or chin strap. To avoid confusion, this device will be referred to in this brief as the mouth strap.

(T.320). Thomas testified that Petitioner's Exhibit 1-K is an accurate depiction of how the mouth strap was affixed during Davis's execution (T.318-19). When the mouth strap was affixed to Davis, Thomas did not see any reaction "out of the ordinary" from Davis (T.320). He explained, "We've always put them in place, held the chin down and the head back" (T.320). The way the mouth strap was placed on Davis is the way it has been done in all other executions (T.340). Respondent stipulated that the mouth straps used in other executions were the "same as in design, purpose and function" as that used on Davis (T.74, 86-87).

Upon questioning by the court, Thomas explained the positioning of the mouth strap in Davis's execution:

THE COURT: If you look at that picture [Pet. Ex. 1-I], you'll see that the mask covering his mouth is so tight against, it's pushing the nose up to the side, and the blood is then coming directly down on the strap. Was it tightened like that?

THE WITNESS: Yes, sir.

THE COURT: Tightened, and I guess his nose -- and pushing it up sideways or something, not a straight push up.

MCCLAIN: This is what it looked like to you?

THE WITNESS: (Nods head.)

(T.328).

Thornton holds the mouth strap against the condemned's face while Hackle buckles it (T.812-13). Thornton testified Petitioner's Exhibit 1-I did not show the way a prisoner's head

was normally secured in the electric chair "because we try to get the chin down lower. The head is not exactly positioned like we normally try to have it" (T.814). In the photograph, the mouth strap appears higher on Davis's face and closer to his nose than when it was first positioned (T.814). Thornton could not see the mouth strap or Davis's face when the chin strap of the headpiece was later tightened because the mask of the headpiece was covering Davis's face (T.834). Davis's face was not red before the mouth strap was attached, but began to turn red as the mouth strap was attached (T.818).

Physician's assistant Mathews, who was in the execution chamber, testified that the mouth strap was not impinging on Davis's nose and that Davis did not appear to have difficulty breathing (T.1024). Once the hood of the headpiece covered Davis's face, however, Mathews was not able to see Davis's face, nor what happened behind the hood when the chin strap of the headpiece was being tightened (T.1033).⁵

⁵ Although on direct examination Mathews testified he could not recall whether or not Davis's body slumped when Mathews loosened the chest strap to apply a stethoscope (T.1028), on cross-examination, Mathews testified, "The more I sit here and think about it, I would have to say, yes" Davis's body slumped forward (T.1039). According to Mathews, the photograph in Petitioner's Exhibit 1-K shows that Davis is leaning forward and his shoulders are not against the back of the chair because the chest strap had been loosened and the mouth strap was the only thing holding Davis upright (T.1039-40; see Pet. Ex. 1-K). Another photograph shows Davis with the mouth strap unbuckled, and his body is sitting upright in the chair without any support
(continued...)

Warden Crosby is to the condemned person's right as the straps are being affixed (T.1359). During Davis's execution, Crosby does not remember seeing Thomas place his hands on the mouth strap as Hackle was tightening it and has no way of knowing which hole it would have been tightened to (T.1362). Before the mouth strap is applied, Crosby asks the condemned for a last statement, because after the mouth strap is applied, the person is unable to speak (T.1362-63).

Walter Zant, formerly superintendent of the Georgia Diagnostics Center, was involved in 18 judicial electrocutions in Georgia (T.1288). Zant testified that in Georgia, a condemned person's head is affixed to the electric chair by means of a chin strap similar to that found on a football helmet (T.1292). This strap is not similar to the mouth strap used in Florida as it does not cover the person's mouth and does not obstruct the person's ability to breathe (T.1299, 1303).

After the mouth strap is in place, the headpiece is put on (T.320; Pet. Ex. 7).⁶ The mask of the headpiece covers the condemned's face as soon as the device is placed on the head, so when the chin strap is being tightened, one cannot see the

⁵(...continued)
from the mouth strap (T.1418; Pet. Ex. 1-).

⁶The headpiece consists of the head electrode, the mask which covers the condemned person's face, and a chin strap (See Pet. Ex. 7).

condemned's face (T.360, 834). Thomas testified they try to place the headpiece on the crown of the head because they have "[j]ust always done it" that way (T.320-21). Thornton first testified that the protocol requires placing the headpiece on the crown of the condemned's head (T.836-37), but after reviewing the protocol, agreed that the protocol does not require that the headpiece be placed on the crown of the condemned's head (T.842-43). Thornton believed the headpiece was not placed on the crown of Davis's head "because of his size" (T.837). After the execution, Thornton noticed that the headpiece was to the left side of the crown of Davis's head (T.838). Crosby testified that the headpiece is to be placed on "the top of the head," but was "[n]ot sure if the procedure manual speaks to that" (T.1366-67). However, "[y]ou want to be on the top of the head. Don't put it here on the forehead" (T.1367-68).

A sponge goes under the headpiece (T.321). The sponges are always about the same size for each execution (T.338). In Davis's execution, the sponge was "very wet" and a lot of water dripped on Davis's back and front and on the floor (T.321, 322-23). McNeill wiped up some water that had dripped on the floor (T.403). Crosby testified that he asked an electrical engineer if there could be too much water on the sponge, and the engineer said, "no. Water is your friend. You can mop up whatever extra there is" (T.1331). The "Execution Day Procedures" direct, "As

the head piece is secured, any dripping/running saline solution shall be dried with clean towels" (Pet. Ex. 8). Crosby testified that, according to his discussion with an engineer and pursuant to the protocol, he makes sure water is dripping from the headpiece and that it is "running down as it should" (T.1371). In Davis's execution, Crosby could not say whether or not the amount of water dripping from the headpiece was more than usual because "I haven't got a barrier [sic] for usual" (T.1371-72).

The headpiece and sponge are put on the head together (T.323). Then, Thomas tightens the chin strap on the headpiece (T.323; see Pet. Ex. 7). He fastened this chin strap "tight" (T.323). Thornton did not know how tightly Thomas fastened the chin strap (T.835-36). Thomas did not know whether the headpiece remained on the crown of Davis's head or slipped forward (T.324). Thomas did not see Davis's face at this time because he was tightening the chin strap (T.324). Between placement of the mouth strap and tightening the chin strap of the headpiece, ten to twenty seconds elapsed (T.324). While the chin strap of the headpiece is being tightened and thereafter, Thornton cannot see the condemned's face because the mask is covering it (T.834, 838). After the headpiece is applied, Thornton moves behind the chair and cannot see the condemned's face (T.819).

Crosby could not recall the application of the headpiece to Davis nor what Davis's face looked like when the chin strap was

tightened (T.1364-65). According to Crosby, the chin strap is to be pulled "snug," but he "would not expect it to be pulled as tight as it could be pulled" (T.1365), because "[i]f you pull that thing as hard as you could, you're liable to choke him or break his jaw or something" (T.1366).

After the chin strap is tightened, Hackle attaches the electrode to the headpiece (T.325). Attaching the electrode took about twenty seconds in Davis's execution (T.325).

Thomas heard Davis moan once while Hackle was tightening the mouth strap (T.330-31). McNeill testified that Davis "didn't make any sounds that wasn't normal, other than tightening the strap, they'll kind of grunt. The same when you put the head strap, the one that goes around the head. He grunted then, all I heard, a grunt" (T.358-59). This grunt occurred while Thomas was tightening the chin strap (T.360). It is common to hear grunts from the condemned (T.398-99). Warden Crosby heard Davis make two sounds, "like a muffled somebody trying to say something," just before the execution (T.1363). Mathews heard two noises from Davis, "like he was trying to say a few words," but did not check to see what Davis was trying to say (T.1035-36).

In Davis's execution, Thomas noticed blood when the warden went to the telephone, but before the current was turned on (T.326). This was after the mouth strap and headpiece had been attached. Thomas was standing to Davis's left and could see

under the mask covering Davis's face (T.326-27). Thomas saw blood coming from Davis's left nostril (T.327). Thomas did "[n]othing" because "it wasn't nothing but a nosebleed" (T.327-28). Thomas "seen two bubbles" "come out of his left nostril" "like he was breathing" (T.329). Thomas did not alert anyone that Davis was bleeding (T.329-30).

The court questioned Thomas about what he did when he heard Davis moan and when he saw the blood:

THE COURT: What did you do when you heard him moan.

THE WITNESS: Nothing.

THE COURT: You saw blood coming out of his nose, and you did nothing.

THE WITNESS: No, that was a period of time in there. We had already put the headpiece on him, and I had backed up away from the chair.

THE COURT: Why didn't you do anything?

THE WITNESS: (Shakes head.)

THE COURT: Okay.

(T.331). Thomas saw the blood several seconds before the current was turned on (T.332). On cross-examination by Respondent, Thomas was asked whether the reason he "didn't say hey, this guy's got a nosebleed" was because the switch was going to be pulled in 10 seconds, and Thomas responded, "Correct" (T.339). Thornton testified that he would not have expected a DOC employee in the execution chamber to report observing blood before the

execution began to him or warden Crosby (T.839-40).

Crosby testified that he has told the execution staff, "[Y]ou see anything, don't be afraid to say something" (T.1334). When Crosby was asked if he was aware that Thomas had observed bubbles of blood in Davis's left nostril before the execution began, Crosby answered, "That's the first I ever heard of that" (T.1339). Crosby testified, "If they knew, they should have told me that"; "When I leave here, we have got a problem. . . . I'm going to find out where the problem was, first. We're going to fix it. That's a concern" (T.1339). Crosby testified he would have expected Thomas to report seeing blood, but "I don't know that he would have expected it" (T.1370).

Victor Seryutin, M.D., employed by Florida State Prison, was the physician attending Davis's execution (T.297-98). Seryutin has attended five or six executions (T.298). He understands his responsibility at an execution is to certify death, and he has no obligation to treat the condemned (T.298).

Crosby has "had no specific conversation with Seryutin, because generally it's the execution team that does the strapping in, puts the headpieces on that I make my checks with. I do not turn around and look at Seryutin, say now, do you think he is okay?" (T.1368). Based on the protocol, the doctor's only role is to pronounce death (T.1368). If Seryutin had noticed the mouth strap being placed in a way that obstructed Davis's ability

to breathe, Crosby "would have thought he would communicate that to me" (T.1369).

Seryutin testified that when he saw blood on Davis during the execution, he had no responsibility to take any action to stop the execution or to treat Davis (T.298). Seryutin explained what he believed to be the cause of the bleeding:

And I can explain details what I feel, why he have bleeding. When last belt was tied here, tied here, completely, and the -- placed here with mask, he (demonstrating), try to a little bit moving.

Q He tried to struggle is what you're indicating?

A Like this, maybe during this time small vessels broken here. Or he broken by belt, the belt possibly.

Q Because he couldn't get any air possibly?

A Yeah. Yeah.

(T.299-300). When Seryutin lifted the mask at the conclusion of the execution, Davis looked like the photograph in evidence as Petitioner's Exhibit 1-I (T.304).

After the current was turned off, Thomas saw Davis's body "like heave one time" (T.334). Seryutin also saw Davis's chest move "a little bit" (T.303). Mathews saw Davis's "chest and shoulder areas" move "like a shrug" two times, one to one and a half minutes apart (T.1027, 1041).

After the execution, Thomas cleaned the mouth strap with water and bleach (T.335; Pet. Ex. 5). The streak on the mouth

strap is where the blood was (T.335, 358). Thomas also cleaned the chin strap of the headpiece (T.336; Pet. Ex. 7). The discoloration in the middle of the chin strap was blood (T.336, 358).

C. WITNESS OBSERVATIONS OF THE CONDEMNED DURING EXECUTION

1. The Execution of Allen Davis

John Moser, Capital Collateral Regional Counsel for the Middle Region, witnessed the Davis execution (T.153). Moser watched the clock in the execution chamber as the events progressed (T.154). When all the apparatus had been affixed and Davis appeared prepared for the execution, the clock showed 7:05 (T.162). There was a lull in activity, and then at 7:10, Davis's body tensed (T.162). Between 7:05 and 7:10, Moser heard "two distinct what appeared to be screams emanating from Davis's area" (T.162-63). The screams were closer to 7:10 than to 7:05 (T.163). The noises sounded like "a scream with someone having something over their -- their mouth. It obviously was a great degree of anguish associated with it from the sound of it" (T.181). At 7:13, after Davis's body had stopped tensing, Moser saw Davis's chest move "back and forth several times" (T.168). At 7:16, Moser saw "a repetition of this chest movement of several times. I didn't actually count the number of times, but it was more than one. I don't know the number of times, but again, the chest movement backward and forward" (T.169). The

chest movements occurred before anyone examined Davis (T.169, 183). Moser noted the times of the chest movements as they occurred, and his notes were introduced into evidence (T.178; Resp. Ex. 1).

Mark Lazarus, a DOC employee, attended the Davis execution (T.189). As the headpiece was placed on Davis, "water ran down towards the back and the sides on Davis" (T.195, 206). After the headpiece and mask were on, "Davis made an attempt to -- to yell out" "two, one-syllable sounds" (T.197). Several seconds after the electricity was turned off, Lazarus saw "a shuddering like, like a muscle spasm" in Davis's chest area (T.201).

Sheila McAllister, a correctional probation officer at Wakulla Correctional Institution, witnessed the Davis execution (T.208). After Davis was strapped into the chair, but before his body tensed, McAllister heard Davis make "a moaning sound or a couple of moaning sounds" (T.217). While the first medical person was examining Davis, McAllister saw Davis's chest move three or four times, spaced a few seconds apart (T.222). The chest strap was still tight when she saw the chest movements (T.228). When Davis was first brought into the execution chamber, his face was "kind of red," but not as red as it appears in Petitioner's Exhibit 1-F (T.226-27).

Michael Collins, a nurse at Florida State Prison, attended Davis's execution (T.276). After Davis was strapped into the

chair and the mouth strap and headpiece were in place, but before the current was applied, Collins heard Davis make a "loud, high-pitched noise," "a loud maybe two, three-second high-pitched murmur" or a "squeal" (T.278, 280).

Steve Wellhausen, employed at Florida State Prison, attended the Davis execution (T.288). After the headpiece and mask were in place but before the electrocution began, Wellhausen heard a "moan" from Davis about a minute after the mouth strap had been applied (T.290). After the electricity was cut off, Wellhausen saw more than one "movement, like muscles in the chest area" (T.294). The movements looked like someone "flexing their chest muscles or contracting their chest muscles" (T.296). Wellhausen has attended more than 10 executions and has seen that type of chest movement before in several executions (T.296).

William Muse, an administrative lieutenant at Florida State Prison, was a member of the execution team at Davis's execution (T.704). Before the electrocution began, Lt. Muse heard a "groan" from Davis (T.706). At the time of this groan, the mouth strap and all the straps were in place (T.711-13). After the power was turned off, Lt. Muse saw "possible breathing, just as an exhale" from Davis (T.708). Lt. Muse demonstrated "an upward and down movement of the chest of about four or five inches" (T.708). This movement occurred while Mathews was beside Davis (T.714). There were two movements (T.714).

Thomas Varnes, warden of Wakulla Correctional, attended Davis's execution (T.717). Varnes heard moans from Davis after the headpiece was affixed (T.721-22). The moans occurred one minute or less before the current started (T.725).

2. The Execution of Jesse Tafero

Ellen McGarrahan witnessed the execution of Jesse Tafero (T.37). After the current was turned on, flame and smoke came out from under the headpiece (T.42). After the electricity was turned off, Tafero's head was "nodding back and forth" and his chest "was moving in" (T.43). The electricity was turned back on, and again flames and smoke rose from both sides of the mask (T.43-44). The electricity was again turned off, and Tafero's head was nodding and his chest looked like it was breathing (T.44). The electricity was turned on again, and there were flames and smoke (T.44-45). After the electricity was turned off, Tafero was still (T.45). The mouth strap looked like it covered Tafero's entire mouth (T.51-52). Tafero could not have talked after that mouth strap was on (T.56). The mouth strap depicted in Petitioner's Exhibits 1-A, 1-E, 1-F and 1-I looks like the strap used on Tafero (T.58-59, 60-61).

David Brierton prepared an investigative report regarding the Tafero execution (Pet. Ex. 24, No. 40). Appended to that report are statements of witnesses to the execution. Frank Kilgo, attending physician, reported that after the first

application of current was stopped, "spasmodic respiratory sounds were audible" (Pet. Ex. 24, No. 40). After the second application of current, "spasmodic respiratory sounds produced oral and nasal fluid gurgling" (Pet. Ex. 24, No. 40).

Rankin Brown reported that after the first application of current, Tafero "appeared to take several breaths" (Pet. Ex. 24, No. 40). Alan Martin reported that after the first application of current, "I noticed the body move as if to be gasping for air" (Pet. Ex. 24, No. 40). William Mathews reported that after the first application of current, "the body began to exhibit fasciculations (motor movement) of the left lower leg and the body sighed approximately twice, making a gurgling noise" (Pet. Ex. 24, No. 40). After the second application of current, Mathews reported, "the body sighed approximately twice with a gurgling noise" (Pet. Ex. 24, No. 40). Gary McLain, reported that after the first application of current, "I observed what appeared to be deep breaths taken by Tafero" (Pet. Ex. 24, No. 40). After the second application of current, McLain "observed what appeared to be a couple of deep breaths from Tafero" (Pet. Ex. 24, No. 40).

3. The Execution of Jerry White

Michael Minerva, former Capital Collateral Representative, witnessed the execution of Jerry White (T.64). As White's body stiffened and thrust against the chair, Minerva heard a noise from White that was "a sharp or deep intake. It sounded like a

breath" (T.69). Minerva likened the noise "to when someone touches something very hot and recoils from it and in the nature of a deep breath in" (T.69-70). The mouth strap depicted in Petitioner's Exhibit 1-G looks like the mouth strap used in White's execution (T.71-72).

4. The Execution of Pedro Medina

Glen Dickson, pastor of Westminster Presbyterian Church in Gainesville, witnessed the execution of Pedro Medina (T.76). After all of the apparatus was attached to Medina, smoke and flame rose from the top of his head (T.78-79). As a man in a white coat went to examine Medina, "I could see Pedro take a deep breath, like I can see his chest expand, and then there was an interval, and then he took a second deep, gasping breath" (T.80). "Pedro took a gasping breath. There was an interval, he took a second gasping breath. There was another interval of some seconds, and he took the other third gasping breath. And after that third breath, I could see his body slumped" (T.83). Dickson explained, "You know, you take a deep breath, your chest expands. And his chest went back, and then some seconds later his chest expanded again, and yet a third time" (T.91). After the "mouth gag" had been placed on Medina prior to the execution, there was a period of "[p]erhaps a minute, minute and a half, two minutes" before Dickson saw the smoke (T.85-86). The mouth strap was affixed to Medina the same way as the one in Petitioner's Exhibit

1-I (T.88).

Patricia McCusker, a Florida State Prison employee, witnessed the execution of Pedro Medina (T.235-36). When Mathews and Almojera were examining Medina at the conclusion of the execution, Ms. McCusker saw "a contraction of the chest muscle" two or three times by Medina (T.239,240).

When William Mathews, physician's assistant at Medina's execution, examined Medina after the execution, Mathews felt an agonal pulse or irregular beat in Medina's wrist (T.1046). Mathews has felt such a pulse at least twice following an execution (T.1045).

5. The Execution of Leo Jones

Rabbani Muhammed witnessed the execution of Leo Jones (T.111-12). The mouth strap depicted in Petitioner's Exhibit 1-I is very similar to the one applied to Jones (T.114). The strap placed under Jones' chin was "tied very tightly. I could see his -- the flesh bulge from the tightness of the strap" (T.117). Jones was affixed to the chair in a manner similar to the three other executions Muhammed had witnessed (T.118). Petitioner's Exhibit 1-K generally shows the way Jones was affixed in the electric chair (T.144). The straps were "very tight" (T.121). Because of what he had observed in other executions, Muhammed had instructed Jones to indicate if he could not breathe (T.118-19). After all the apparatus had been applied, Muhammed saw Jones

moving his pinky finger up and down (T.120). Respondent's objection to the question of what this finger movement meant to Muhammed was sustained (T.120).

After the electricity stopped, Muhammed saw Jones' body "[h]eave three times up" and Jones' chest "move in a spasm type method" (T.127). After these movements stopped, a doctor moved over to Jones (T.127). The movement was a "drawing up," "like a gasp," "like, if you inhale, if you inhale, your body would move when you inhale, your torso" (T.128).

In his religious capacity, Muhammed prepared Jones' body for burial (T.130). While preparing Jones' body, Muhammed took photographs (T.131). Petitioner's Exhibit 4 are the photographs of Jones' body which were taken about 4 p.m. on the day of his execution (T.131-32). The photographs reflect a 3/8 inch deep wound in the top of Jones' head, a wound on the right leg, a wound on the left side of Jones' head near the temple, a swollen area on the back of Jones' head, a puncture in his chest that is 1/8 inch in diameter, a severe burn from 1/8 to 1/4 of an inch deep going from Jones' calf up to his knee, and a swollen area on Jones' face (T.135-38). Muhammed was with Jones until 5:30 a.m. the morning of his execution, and saw no swelling on Jones' face before the execution (T.139). Prior to the execution, Jones did not have these wounds on his body (T.150).

6. The Execution of Judias Buenoano

Gregory Smith, Capital Collateral Counsel for the Northern Region, witnessed the execution of Judias Buenoano (T.93). When the chest strap was applied to Buenoano, it looked too tight, and Buenoano "indicated by a grimace that it hurt her" (T.95-96). The strap was then slightly loosened (T.96). The mouth strap was applied to Buenoano in a manner similar to that depicted in Petitioner's Exhibit 1-I (T.103). "[S]ome minutes passed" after the mouth strap and headpiece were affixed; "it was for quite an unnatural period of time, because I recall having thinking about that" (T.104).

7. The Georgia Execution of Alpha Otis Stephens

Walter Zant, former warden of the Georgia Prison where judicial electrocutions are conducted, was present at the execution of Alpha Otis Stephens (T.1297). In Georgia, the electricity cycle runs for two minutes (T.1294). During Stephens' execution, the two-minute cycle was completed and, five minutes later, was started over because Stephens exhibited chest movement (T.1297). Five minutes after the first complete cycle, a doctor checked Stephens (T.1298). After the doctor checked Stephens, a second cycle was applied (T.1298).

D. EXPERT PATHOLOGIST TESTIMONY REGARDING THE DAVIS EXECUTION

Petitioner's witness Robert Kirschner, a forensic

pathologist, performed an autopsy of Allen Davis (T.733),⁷ approximately one week after the execution (T.737-38). He reviewed the autopsy photographs by Hamilton and testified that Davis's body was essentially in the same condition as it was for the earlier autopsy, with one exception: much of the congestion appearing in Davis's face at the time of the original autopsy had disappeared (T.738). The delay in time before Kirschner's autopsy did not impede his examination (T.738).

Kirschner's examination disclosed petechial hemorrhages, which are "small pinpoint bleeding sites or hemorrhages that were present around the eyes, on the eyelids and . . . in the eye on the sclera, which is the white portion of the eye" (T.741). Such hemorrhages "are frequently associated with asphyxiation" (T.741, 743-44). Kirschner indicated the areas of petechial hemorrhaging on Petitioner's Exhibits 1-F and 1-H (T.742-43).

Asphyxiation is "death due to lack of oxygen, either due to inability to breathe or to some obstruction of the airways, either externally or internally"(T.741). During asphyxiation, it takes two to four minutes for irreversible brain damage to occur,

⁷Dr. Kirschner is a clinical associate in the departments of pathology and pediatrics at the University of Chicago and a forensic consultant to Physicians for Human Rights, an international human rights organization (T. 730). In addition to conducting an autopsy of Mr. Davis, Dr. Kirschner relied upon photographs of Mr. Davis in the electric chair, Dr. Hamilton's autopsy report, and materials regarding previous executions including autopsy reports, photographs, witness statements and newspaper accounts (T. 736-37).

but may take longer for the person to die (T.745).

Kirschner testified as to what was happening to Davis if one to five minutes passed from the time the mouth strap was applied and the application of electrical current:

The face strap that is around . . . Davis' face is occluding his mouth and, furthermore, as I say, is pushing up under his nose and it is producing partial asphyxiation during this period of time.

As I say, if one put one's hands up on your face in this way (demonstrating) with that kind of pressure on the nose, as is visible in the photograph, which is actually crinkling the skin on the nose, and pushing upward and occluding the mouth, in this way you can realize there's at least -- he's being at least partially asphyxiated.

(T.747). Kirschner testified that, to within a reasonable degree of medical certainty, Davis was asphyxiating prior to the application of the current (T.748). This opinion was based upon Davis's appearance in the photographs and the presence of petechial hemorrhages (T.748). The presence of the bloody bubbles observed by Thomas indicates "that the pressure upward of this mask has caused -- has probably caused -- this is what has caused the nose bleed and the fact he's having difficulty breathing" (T.748). To a reasonable degree of medical certainty, Kirschner opined, Davis "was suffering from conscious pain during that period of asphyxiation, the pain being that of air hunger, which is a very powerful reflex, and a feeling of suffocation is what is occurring" (T.758). To a reasonable degree of medical certainty, Kirschner's opinion was that the medical cause of

Davis's death was "electrocution and association of partial asphyxiation" (T.752).⁸

The bleeding during Davis's execution came from his nose (T.745). Kirschner reflected the nose to examine the nasal cavity, and it appeared that the bleeding came from the septum, although he could not determine the specific site (T.745). Kirschner was satisfied the source of the bleeding was in the nose, not higher up in the sinus cavities, because "there was no evidence of blood coming down from -- from within the sinuses, in the posterior pharynx" (T.773). Kirschner saw some hemorrhage in the mastoid sinuses, but examination of the inner surface of the skull disclosed no evidence of hemorrhages within the ethmoid sinuses (T.773). Hamilton did not dissect the nose or do other testing to determine the source of the bleeding, such as removing the tongue or looking in the posterior aspect of the mouth or nasal pharynx (T.745-46).

Kirschner's internal examination also disclosed no evidence that Davis was predisposed to nose bleeds due to the use of nonsteroidal anti-inflammatory medications (T.752). There was no bleeding in his gastrointestinal tract or elsewhere (T.752). Davis's nasal cavity looked "perfectly normal," and there was no

⁸In an electrocution, the current causes muscle tetany which interferes with the ability to breathe (T.749). Thus, application of the current would not relieve symptoms of suffocating (T.749).

indication he was predisposed to nose bleeds (T.753).

Rather, Davis's nose bleed was "caused by the mechanical effects of this face mask pressing upward on his nose" (T.752). This caused a "physical disruption of the capillaries that produces the bleeding" (T.752). Kirschner explained the evidence supporting his opinion:

First of all, we have the temporal relationship of the nose bleed being associated with the placement of a face mask and the -- to suggest that this nose bleed is due to, in fact, that he's been using -- he's been taking nonsteroidal anti-inflammatory drugs and coincidentally this occurs at this time is asking a lot and it just doesn't make sense.

If he was going to bleed from the use of his medications, he would have had nose bleeds or gastrointestinal bleeding sometime earlier.

So the -- and we have a very good explanation of why his nose began to bleed at this particular time based on the -- based on the photographs that we have here from the execution chamber.

(T.753-54).

Kirschner's external examination of Davis disclosed a halo of electrical burns on the scalp, burns on the right side of the face and above the eyebrow, an arcing burn on the lower abdomen or suprapubic region, a burn on the inner aspect of the right thigh, and a burn on the right calf (T.740-41). The burns to Davis's suprapubic region and inner right thigh were "full thickness burns," meaning they extend all the way through the skin to the subcutaneous tissue (T.756). These are "arcing burns" which occur when "the electricity comes out of the skin or

travels in the subcutaneous tissues under the skin and is exited at that particular point and perhaps even re-enters the skin there" (T.756). There is no evidence that these burns were caused by a strap used in the execution (T.756-57).

Petitioner's Exhibit 1-H shows the headpiece sponge came down over Davis's forehead, causing burns, and below those burns are additional "drip burns" (T.759). "Drip burns" are not arcing but are "electrical burns associated with the saline in the sponge that is dripping down to the eyebrow" (T.759).

If Davis was still bleeding from his nose after the electrical current was turned off, that would indicate his heart was probably still beating (T.749). If his heart had stopped, there could still be blood oozing from his nose, but any actual bleeding would indicate that there was still cardiac activity (T.749). If a heart is beating, the person is medically alive (T.749-50). If a witness testified that Davis was still bleeding after the current was turned off, that would indicate Davis's heart was probably still beating (T.801). Reports of Davis's chest moving up and down after the current was turned off indicate "[t]hat there's still some brain activity because it requires brain activity to produce respiratory effect" (T.751). This brain activity comes from the respiratory centers of the brain stem and could not occur if Davis's brain was immediately depolarized by the electrical current (T.751). A witness

describing Davis drawing up and down two times after the current was turned off indicates agonal breathing, not a simple slumping of the body (T.799). Agonal breathing means that there has to be some brain activity (T.799).

Respondent's witness William Hamilton, a forensic pathologist, performed an autopsy on Davis (T.1062). He saw burns on Davis's scalp, forehead, suprapubic region, right upper medial thigh, groin, right calf and behind the right knee (T.1069). As to the burns in the suprapubic region, thigh and groin, Hamilton testified, "those burns were probably caused by the metal buckle on the strap" (T.1109, 1112). There were punctate and irregular burns on Davis's forehead, above the nose and eyebrows (T.1071). These burns are arcing burns (T.1107). All of the burns were third degree burns (T.1110-11).

There was blood in Davis's nostrils, but no blood in his mouth, epidural or subdural spaces, or subarachnoid spaces (T.1072). The blood came from the nose, but Hamilton did not dissect the face and into the paranasal sinuses, concluding it appeared to be an "ordinary nosebleed" (T.1075). Hamilton believed "if he hadn't received the electrical current at the time, he would not have had the nosebleed" (T.1076, 1118).

Gastrointestinal bleeding is the most common side effect of non-steroidal anti-inflammatory drugs (T.1115). Hamilton did not see any specific internal findings that would be associated with

taking non-steroidal anti-inflammatory drugs (T.1116).

Hamilton noted that Davis's face was "discolored high on the cheeks and under the eyes" (T.1091). This discoloration was "vascular congestion," i.e., "vessels filled with blood, expanding" (T.1091), which was "probably just an agonal event" (T.1091). Hamilton had not reviewed the photographs of Davis in the electric chair (T.1092). Hamilton initially testified the burns occurred postmortem (T.1078). Later, when asked, "do you have an opinion as to whether or not all of the burn marks or injuries observed on Davis' head region were posted [sic] mortem in nature," Hamilton responded, "No, I don't, because I'm not sure how quickly it takes for the first sign of burns to occur" (T.1082).

Respondent's witness Kris Sperry, a forensic pathologist, observed Kirschner's autopsy of Davis (T.852). In looking for the cause of the bleeding, Kirschner removed Davis's brain and inspected the floor of the skull, and dissected around the base of the nose to look inside the nasal cavity (T.854). Kirschner also removed Davis's tongue, which had not been done by Hamilton, tilted the head back and looked at the opening in the back of the throat which leads into the nose (T.855, 908).⁹

⁹Hamilton had done no more than look inside the nose to find the source of the bleeding, but had not dissected the nose (T.909). Regarding whether Hamilton had done enough to diagnose a nosebleed, Sperry testified, "I think it's obvious he had a
(continued...)

Sperry and Kirschner "agreed [the bleeding] came from the left side of the left nostril and that it was some structure up inside the left side of the nasal cavity" (T.857). Sperry and Kirschner also "agreed we could not find the site" of specifically where the blood came from (T.857). Sperry did not see any trail of blood above the septum, even though if blood had flowed from somewhere higher than the septum, it would leave a trail (T.912-13).

Sperry observed petechial hemorrhages around the eyes and over the inside of the upper cheek, stopping at the upper or midcheek region, and inside the eyes (T.862). Sperry did not dispute Kirschner's testimony that petechiae were present in the numbers and distribution that Kirschner described (T.918). Sperry agreed that finding petechiae is a clue indicating that there was high pressure on the blood in that capillary (T.918-19). He also agreed that petechiae could be found anywhere in the body where there is a capillary, and thus the location of the petechiae is another clue (T.919). Sperry also agreed that in determining the meaning of the presence of petechiae, one has to look at where they are, how many of them are present and then consider the circumstances of the death (T.921, 864).

Sperry agreed that the photographs of Davis in the electric

⁹(...continued)
nosebleed" (T.909). Nothing in Hamilton's report indicates that he did anything to determine the cause of the nosebleed (T.910).

chair show congestion across the front of his upper face, on the chin and the neck behind the chin (T.866-67). Congestion means that the blood vessels are filled with blood (T.866), and does not occur after death (T.867). Congestion is an active process and requires a functioning body (T.867). Sperry opined that the congestion was "caused by physiologic activity of Davis" (T.872).¹⁰

Sperry believed that "obviously with the mouth strap on, he could not breathe through his mouth, but the nostrils are unoccluded" (T.994; see Pet. Ex. 1-I). Sperry could not say to what extent the mouth strap might have caused pain or discomfort (T.995). Sperry agreed that the photographs of Davis in the electric chair show white lines in Davis's face at the edges of

¹⁰A person can make his face congested by performing the "Valsalva maneuver," which "is a maneuver that actually every human being does every day just in the process of when we evacuate our bowels of having a bowel movement" (T.867). This movement "raises the pressure inside of the chest and causes the blood to go upwards into the face and head" (T.868). A person "cannot hold this very long because our bodies make us breathe" (T.868). However, Sperry testified that if Davis was heard moaning or attempting to speak, that would mean at least a slight amount of air or chest movement occurred (T.875).

Sperry opined that the Valsalva maneuver "explains why his congestion is there" and accounts for the presence of the petechiae (T.927-28, 989). In reaching this conclusion, Sperry did not talk to any witnesses to Davis's execution, did not talk to the doctor who was at the execution, and had no information about what that doctor observed when the mouth strap was placed on Davis (T.989). Sperry did not know how much time passed after the mouth strap was put on and the electric current began (T.991). Sperry reached his opinion without considering any of this information (T.991).

the mouth strap indicating that the mouth strap was applying pressure to Davis's face and agreed that the right nostril was touching the mouth strap (T.922-24). Sperry agreed that pressure on the skin, such as pushing on the skin with a finger, will produce a whiteness (T.924).

The court questioned Sperry about the straps on Davis's face:

THE COURT: Let me see 1-I. I want to ask you about this.

THE WITNESS: Yes, sir.

THE COURT: This, of course, is the photograph that's been discussed a lot showing the face strap in place --

THE WITNESS: Yes.

THE COURT: -- pushing up under the nose to the point that the nose is crimped up in there, plus the chin strap is in place. It shows the blood bleeding straight down on top of the strap under his nose. Tell me what your opinion is the cause of the bleeding.

THE WITNESS: There is someplace up inside the left side of his nose that spontaneously ruptured. . . .

. . . .

[THE COURT:] Thornton put this up here first. Thomas put his hand on it and held it there, and there was no blood whatsoever. They then come around, and Thomas said he tightened this thing as tight as he could tighten it. Then they put this thing down, he hears two moans, he looks over and sees the nosebleed.

. . . .

THE COURT: In fact, those things occurred just like that. You think it has no significance in the bleeding?

THE WITNESS: As far as the bleeding being caused by the placement of that strap, no. . . .

THE COURT: Very fortuitous time to bleed, huh?

THE WITNESS: Timing is everything.

(T.1004-06).

Davis's medical records indicate he had a history of hypertension (T.869-70). Nosebleeds are a problem in people with hypertension (T.871-72). Sperry did not know what Davis's blood pressure was in the week before or day of his execution (T.995-96, 1001). There was no evidence in the medical records of Davis ever having a nosebleed (T.996).

Sperry testified that the "halo" burn on Davis's head from the head electrode was "low on the forehead," which is "more anterior, or is lower on the front of the head as compared with the majority of other electrocutions" (T.899-900). There are also arcing burns on Davis's face "immediately below the edge of the halo, if you will, on the front surface, and also somewhat on the right-hand side, right temple and side of the head" (T.900). The arcing on Davis's face is from the fluid on the sponge (T.902). The burns on Davis's right thigh and abdomen were also arcing burns (T.1001-02). Arcing burns indicate current was passing outside the body (T.1002). These burns were not caused by the buckle on the straps because the photographs show that the "buckle was not anywhere near that" (T.1002-03). Why the arcing occurs in certain places "comes down to the unpredictable nature

of some of this" (T.1003).

E. FACTS REGARDING PAIN IN THE EXECUTION OF ALLEN DAVIS

Kirschner's opinion was that Davis experienced pain during his execution resulting from partial asphyxiation. Donald Price, a neurophysiologist and psychologist at the University of Florida, also testified that Davis experienced pain.¹¹

Price's opinion is that "judicial electrocution results in considerable enormous pain and suffering as well as other negative emotional experiences" (T.423). Price testified that there are three general ways pain could be elicited during a judicial electrocution: through strapping the person's body to the electric chair, through penetrating the brain with electrical currents which activate pain-related areas of the brain, and

¹¹Dr. Price conducts research on pain mechanisms, pain behavior, pain perception and the measurement and assessment of pain (T. 407, 412). He has published papers regarding brain mechanisms of pain and on the measurement and assessment of pain (T. 409). Dr. Price is the author of Psychological and Neural Mechanisms of Pain, is currently finishing another book on the same subject, and authored two chapters of The Handbook of Pain Assessment (T. 409, 412). He is also an associate editor of the journal Pain (T. 412). Dr. Price has conducted studies which included examining the behavior expressions of pain (T. 413). His training and research also includes examining the effect of electrical currents on the human nervous system (T. 411). In addition to his training and research, Dr. Price reviewed about 100 autopsy reports of persons who had been judicially electrocuted; consulted with experts in engineering, neurology, neurophysiology and psychology regarding judicial electrocution; reviewed published materials reporting the experiences of people who had undergone electrical trauma from manmade devices and lightning strikes; and reviewed accounts by people who had witnessed judicial electrocutions in Florida, Georgia, Tennessee and Indiana (T. 420-22).

through peripheral damage to body tissues such as burning and muscle contractions (T.424).

Price testified that evidence regarding the behavior of the condemned person from observations during a judicial electrocution corroborates his opinion that conscious pain and suffering occurs during such executions (T.451). He testified, "The kinds of behaviors that are indicative of pain have been moaning, screaming, gasping for air, moving the head from side to side, writhing movements in the chair" (T.451). Price explained how these behaviors support his opinion:

The behaviors that have been witnessed are in many cases classic signs of pain in human beings, particularly given the context in which these behaviors are displayed.

People moan, gasp for air, move their head from side to side and scream. Normally those behaviors are indicative of pain and even severe pain.

Also, the context is important. People moan in their sleep. You wouldn't say that is pain; but if they are sitting in the electric chair and moaning, then it is much easier to infer the existence of pain.

(T.452).

Scientists study the measurement and assessment of pain in order to alleviate pain (T.453). Pain can be measured and assessed by asking people to rate their pain on a scale and by looking at their behavior, that is, their body movements and facial expression (T.453). In Price's field, studies have been conducted regarding the facial expressions of pain (T.453).

Scientists have developed a system of measuring the severity of pain by looking at facial expression (T.454). These studies have determined that facial expressions of pain are distinct from facial expressions of other emotions (T.454).

The Ekman scale of facial expression, published in 1978, is a system for identifying facial actions indicating pain and has been validated in several studies (T.454). Under this system, particular facial motions indicate pain: a tightening of the eyes, an elevation of the cheek area, a wrinkling of the muscles at the top of the nose between the two eyes, a downward turn of the mouth, and a dropping of the jaw or mouth opening (T.454-55). The severity of pain "is gauged by the number of these indices" and "the extent of their expression" (T.455).

Price testified that photographs in Petitioner's Exhibit 1 show facial expressions of pain (T.456-57; Pet. Ex. 1-I, 1-F, 1-H, 1-G, 1-E). In Exhibit 1-I, Price testified, Davis's eyelids and the muscles around the eyelids are tightened, his cheek area below the eyelids is elevated, his muscles at the top of the nose between the eyes are wrinkled, his jaw has dropped and it is likely his mouth is open (T.458). These expressions "are distinct signs of pain" according to scientific literature and Price's own research (T.458).¹²

¹² Dr. Price testified that Petitioner's Exhibit 1-J corroborates his identification of the facial expressions of pain (continued...)

There is a systematic method for distinguishing the expressions in Exhibit 1-I from expressions indicating other emotions (T.464). Price explained, "The facial expressions of other emotions have distinct patterns that uniquely express those emotions and are distinct from those of pain. For example, anger, excitement, joy and so on have a distinct pattern of facial expressions that are different from those of pain" (T.464). Price also explained that it is "highly unlikely" the expressions displayed in Exhibit 1-I resulted from effects of the electrical current on Davis's muscles because "[i]f the current was just contracting the muscles of the face, you probably wouldn't see any expression of any emotion. You would just see contraction of facial muscles" (T.465).

Price expressed his opinion as to the possible causes of the expressions of pain on Davis's face:

The pain expression could have been induced by the tight strapping of the strap around the face of Davis and other straps that were tightened around his body.

The second way that pain could have been induced

(...continued)
in Exhibit 1-I because Exhibit 1-J shows some of the same expressions but also shows that much of the rest of Mr. Davis's body is not in a state of contraction but is relatively relaxed (T. 459). Petitioner's Exhibit 23, an autopsy photograph of Mr. Davis, also corroborates Dr. Price's identification of facial expressions of pain in Exhibit 1-I because the autopsy photograph shows Mr. Davis's face in a relaxed position (T. 463). This indicates that the expressions on Mr. Davis's face in Exhibit 1-I were not how his face was normally (463).

in Davis was through the electrical currents that penetrated his skull and activated centers of the brain that are involved in pain.

The third general category is the current could have spread to many of his body tissues, including skin, heart and so on that could have caused pain by peripheral stimulation.

(T.466). Price also expressed his opinion that Davis "almost certainly experienced intense or severe pain during his judicial electrocution" (T.466).

F. FACTS REGARDING WHETHER OR NOT JUDICIAL ELECTROCUTION CAUSES INSTANTANEOUS UNCONSCIOUSNESS AND DEATH

John Wikswa specializes in physics, biological physics, electromagnetics, biomedical engineering and electrophysiology (T.611-12).¹³ J. Patrick Reilly is an expert in the effects of electricity on biological systems including the human body (T.545).¹⁴ Wikswa and Price expressed their opinions that

¹³Dr. Wikswa is the A.B. Learned Professor of Living-State Physics at Vanderbilt University (T. 610). He is a fellow of the American Physical Society and the American Institute for Medical and Biological Engineers and a member of numerous professional societies (T. 613-14). He has been a consultant to government and private organizations, has published extensively in his fields, reviews articles for many scientific journals and teaches (T. 614-15). Dr. Wikswa has studied judicial electrocution for seven years (T. 616). In this study, Dr. Wikswa reviewed numerous relevant scientific articles, autopsy reports on executed persons, testimony from hearings in Florida and Tennessee, and the electric chair schematics and chart recordings (T. 620).

¹⁴Mr. Reilly was employed at Johns Hopkins University full time from 1962 until 1998 (T. 540). He is now partially retired and employed part time in the Applied Physics Laboratory at Johns Hopkins, as well as having his own consulting business, Meditech
(continued...)

judicial electrocution does not result in instantaneous unconsciousness and death, but causes extreme conscious pain. Reilly explained fundamental scientific principles regarding the effect of electricity on biological tissues and explained what physiological reactions are likely to occur as a result of the electricity applied during a judicial electrocution.

Wikswa explained that the materials he reviewed in preparation for his testimony included claims that death by judicial electrocution is instantaneous (T.626). The second question involved in this issue is "at what point is consciousness lost" (T.635). While it is clear that at the end of the execution process, the condemned is unconscious, no electroencephalogram measurements have ever been taken during a judicial electrocution to determine when unconsciousness occurs (T.635). There have never been "controlled experiments in human execution with electricity" (T.637).

(...continued)

Associates (T. 539). Mr. Reilly has conducted research on the effects of electricity on biological systems and people (T. 539), has published extensively in his field (T. 541-42), has conducted a study of application of high voltage to humans (T. 542-43), has received a number of awards (T. 543), and has published a book titled Applied Bioelectricity: From Electrical Stimulation To Electropathology (T. 544). In preparation for his testimony, Mr. Reilly reviewed transcripts of the prior electric chair hearing, reviewed pathology reports, researched scientific literature, did calculations regarding the physiological responses to the current in Florida's electric chair, listened to the testimony of this hearing, examined the electrodes used in Florida's electric chair and reviewed the photographs of Mr. Davis in the electric chair (T. 550-51).

Price explained that he approached the question of whether judicial electrocution results in conscious pain with the scientific method (T.423). The scientific approach means one "bring[s] to bear as much as possible all of the observations about the circumstances and the mechanisms that pain might be produced or not produced and, through systematic observation, deduce whether such pain does or does not occur" (T.423). The law of parsimony in scientific study requires that when "you have competing theories or explanations of a phenomenon," "the theory that is consistent with the greatest number of facts and has the least number of assumptions is the better theory" (T.423).

1. Background Data and Scientific Principles

a. Facts Regarding Survivors of Electrical Trauma

Wikswa recited case studies reported in scientific literature regarding people who suffered high voltage electrical trauma but retained consciousness and/or survived the event. These studies describe reports of hundreds of victims of accidents involving voltages between 1,000 and 100,000 volts (T.634-35). Excerpts include the following:

A 35-year-old farmer who, while riding on a gravel bin, struck his head against a high-voltage power line. . . . He denied loss of consciousness. Physical examination revealed 10 percent body area -- body surface area burns involving the right face, neck, right shoulder and right knee.

. . . .

A well-built Ovambo, O-V-A-M-B-O, worker weighing 100

kilograms suffered an 11,000-volt electrical injury when he accidentally clasped two guide-wires suspended from wooden poles carrying high-tension cables.

On admission to the hospital less than one hour after injury, the patient was slightly confused but denied any loss of consciousness.

. . . .

There are two examples in here. The first type is delayed death. Male, aged 42 years: death from burns and exhaustion four hours after a shock of 66,000 volts.

Male, aged 18: death from pneumonia and toxemia from burns 17 days after a shock from 132,000 volts.

Male, aged 35 years: death from burns and toxemia eight days after a shock from 19,000 volts.

There is no statement of consciousness on these, but this article is interesting in that it states that death was not instantaneous at those shocks.

. . . .

A boy, aged 12, climbed a 30-foot pylon carrying a high-tension wire at a pressure of 11,000 volts AC. At the top, he touched the wire with his arm, received a shock and fell to the ground. The village was plunged into darkness and the radios cut off, but the boy himself seemed little the worse. He picked himself up and walked home. . . .

. . . .

Loss of consciousness occurred in 29 of the 64 patients in the high-voltage group. Table Three.

And in this case, the high-voltage group was 54 -- 54 of the 64 patients in the high-voltage group had known voltages. The median voltage was 7,200 volts and ranged from 440 volts to 150,000 volts. So my interpretation of this issue -- of the 64 patients, 35 of them remained conscious during the shock.

. . . .

They evaluated 34 patients with high-voltage electrical injuries admitted between February 1982 and October of 1984. They divided the patients into two groups. Group A was exposed to between 3,000 and 130,000 volts. Nine did not lose consciousness, four did. Group B was 440 volts to 7,000 volts. . . . Six did not lose consciousness and five did.

. . . .

A patient . . . stood on a ladder in a transformer station holding onto an iron wall bracket with his left hand which was in a leather glove, and stretching his right hand towards 22,000-volt triphasic AC conductor which he believed to be switched off.

The victim stated, "When the back of my right hand got within one-half to three-quarters of an inch from the conductor, six or seven narrow blue sparks suddenly jumped to the knuckle of my ring finger.

"At once, my head seemed to get bigger and burst with pain. I heard the most frightening noises in my head and ears, as if I had become a mighty generator inside. At the same time, my body, legs and feet seem to shrink down to nothing until I felt that I could have stood on a 10-cent piece.

"Simultaneously I felt a burning sensation in both hands. I could not say how many seconds it lasted, but it seemed to me a terribly long time. My senses were partially numbed, but I remained conscious, and I felt as if I was in the claws of a mighty monster. My efforts to move my right arm or hand against this magnetic power were quite unavailing. Even my eyes seemed fixed and staring."

. . . .

A 67-year-old right-handed man was injured on June 1st, 1964 by 18,000 volts AC, 60 hertz, from a high-tension line while at work as a pipefitter. He was standing on a rock guiding one end of a metal pipe with his right hand when the other end of the [pipe] hit the high-tension line.

He remembers a loud, quote, "bang," closed quote and was told he was thrown about four feet from the rock.

He was dazed for only a few seconds and resumed work immediately even though he felt shaky for the remainder of the day.

(T.639-45). Wikswo explained, "If death by electrocution was instantaneous, there would be no survivors from industrial accidents or civilian accidents (T.633).

Respondent's witness Sperry testified about patients he had treated in an emergency room who survived a high voltage electrocution (T.902). The two men touched a wire carrying about 15,000 to 20,000 volts with their hands and suffered deforming burns of their hands and arms (T.902-03). When they came into the emergency room, the men were conscious and neither one had had his heart stopped (T.903). They were alive when they were found and did not have to be resuscitated (T.903).

b. Scientific Principles Regarding Electricity's Effects on Biological Systems

Price and Reilly explained that a nerve cell contains electrochemical forces (T.427, 554). Reilly explained that when a nerve cell is stimulated, an electrical potential occurs at the end of the cell (T.555). That electrical potential initiates an action potential, or nerve impulse, which travels to the spinal cord, connects with other nerves, and travels to the brain (T.555). When outside electricity is applied to a sensory neuron, there will be a site of depolarization (T.556). Nerve cells have an area which is depolarized and an area which is hyperpolarized, so every cell is simultaneously polarized and

depolarized but at different locations (T.556-57). When alternating current is externally applied, these locations of polarization will switch on every half cycle of the current (T.557). Every cycle of the alternating current provides a new opportunity to reexcite the tissue (T.558). Price provided a similar explanation (T.427).

"Depolarization" is a normal part of the way a nerve cell works (T. 427). In normal biological function, depolarization is caused by neurotransmitters, but depolarization can be artificially induced by applying electricity (T.427). Depolarization does not mean a nerve cell does not work anymore, but is, in fact, the way nerve cells do work (T.428).

Depolarization triggers excitation (T.558). If the trigger is adequate, that polarization initiates a nerve impulse which travels (T.558). On its own, without external electrical current, a nerve cell can polarize and depolarize in one millisecond (T.559). The 60 Hertz of alternating current takes 16 milliseconds from one cycle to the next (T.559).

To determine the physiological effects of judicial electrocution, Reilly calculated the current density resulting from the amperage administered in a Florida judicial electrocution (T.559-60). In talking about physiological effects of electricity, it is very important to distinguish between current and current density (T.560). For example, if a

milliampere (1/1000 of an ampere) is concentrated into a small area, the current density would be high and would have a physiological effect on that area (T.560). However, if the milliampere is spread over a larger area, the same amount of current has a lower current density and thus has less capability of causing a physiological response (T.560-61).

Thus, in an electrocution using a head electrode such as that used in Florida, the current coming into the electrode would spread out on the brass plate in the headpiece, would then spread out on the sponge under the headpiece, and would spread out further as it reached biological tissues (T.561-63). The current density at any one point would be less than the current coming in (T.561-63). Further, when the current reaches biological tissues, "[i]t would have a tendency to want to conduct into the human tissue, but not by a constant amount or area. It would be an ununiform distribution of the current that would be traveling from that headpiece into the tissue of the body" (T.562). The current density on the electrode would be the greatest at the periphery of the electrode, which explains the "halo" burn on persons who have been judicially electrocuted (T.563).

In a judicial electrocution, the current density will not be uniform throughout the body, but will be varied and nonuniform (T.567). This is so because the tissues of the body have varying conductivity, and the current will "proportion itself according

to the conductivity so it will flow to a greater degree or more easily in those tissues that are most [conductive] and less well on the tissues that are not [conductive]" (T.567-68).

The head electrode first encounters the skin, which is a relatively good conductor compared to other body tissues (T.568). However, the skull is a poor conductor, so current will preferentially flow around the skull, through the skin (T.568). Some current will flow through the skull into the brain, but there will be a much lower current density in the brain (T.568). The current spreads out more in the torso because it is a large area, and thus there is a low current density in the torso (T.569). Reilly explained the conductivity and current densities in other portions of the body (T.568-69).

Reilly has calculated the difference in current density on the skull and within the brain during a judicial electrocution (T.569-70). He looked in the literature and found two studies in which current was applied to the outside of the head and in which current density inside the head was measured (T.570). In one study involving a living monkey, researchers put probes in the monkey's brain to measure the current density (T.570). In the other study, researchers placed half a human skull in a saline bath (T.570). Reilly used the data from these studies regarding the relative amount of current being applied to the head electrodes and the current density measured inside the brain as a

scaling factor to determine the current density inside the brain during a Florida judicial electrocution (T.570). The differential between the current applied to the scalp and the current density within the brain was about 50 times higher in the scalp (T.571). Thus, current density is 50 times higher in the scalp than in the brain (T.571).

Reilly applied this information to the high voltage phase of the electric cycle used in Florida, when the amperage is 9.5 amperes (T.571). When the current from the headpiece is 9.5 amperes, the current density in the brain is .04 amperes per square centimeter (T.571). No measurements of this kind have been made during a judicial electrocution (T.571).

Sperry testified that the resistance of the skull, as reported in scientific literature, is 50,000 ohms (T.1008, 1013-14). Ohm's law states that voltage equals amperage times resistance ($V = IR$) (T.1013). Thus, if one divides voltage by resistance, one can determine the amperage (T.1013). For the high phase of the Florida electrocution cycle when the voltage is 2300 volts, this means dividing 2300 by 50,000 (T.1013).

The amperage crossing the skull during a judicial electrocution does not all reach the brain (T.434). Rather, once across the skull, the current encounters the cerebral spinal fluid and dura surrounding the brain (T.434). Cerebral spinal fluid is highly conductive, and much current preferentially takes

that path rather than entering the brain (T.434).

2. Expert Testimony Regarding The Presence of Conscious Pain During a Judicial Electrocution

a. Petitioner's Witnesses

Wikswow explained that three physiological systems are required for a person to be alive and functioning: the heart, the respiratory system and the brain (T.626). Observations of a heartbeat or respiratory motions after an electrocution ends indicate that these systems are not instantly destroyed during an electrocution (T.627-28). Further, respiratory motions require motor control from the base of the brain (T.627-29). Thus, respiratory motions after an electrocution ends indicate at least that the base of the brain was not instantly and permanently destroyed (T.627-29).

Wikswow expressed his opinion that "it may be possible for an inmate to maintain consciousness for 15 to 30 seconds into the execution" (T.650). Wikswow's review of the scientific literature indicates that "there is no single threshold [of current] for loss of consciousness" (T.683). Wikswow explained that the fact that a Florida judicial electrocution involves a head to leg electrode system is not dispositive because "[t]here are cases in the literature of consciousness having been maintained during an electrical accident that had severe burn injuries to the head that appeared to be more severe than the burns evidenced in Florida electrocutions" (T.652). "There is no single current

pathway" (T.678). Wikswo testified that the provision in the execution day protocol to the effect that if the condemned is not dead after the first application of current, the cycle is to be repeated is "an admission of the fact that death is not instantaneous" (T.671).

During this period of consciousness, the condemned will experience several kinds of pain (T.653). All skeletal muscles will tetanize and pull against each other, causing intense pain (T.653-54). The respiratory muscles are paralyzed, so blood levels of carbon dioxide rise quickly, creating a sense of suffocation (T.654). The current will also directly stimulate pain centers of the brain such that the brain perceives pain elsewhere in the body, although the sensations are generated within the brain (T.655).

Price expressed his opinion that "judicial electrocution results in considerable enormous pain and suffering as well as other negative emotional experiences" (T.423). Three categories of evidence support this opinion: neurophysiological evidence, anatomical evidence and behavioral psychological evidence (T.424). There are three general ways in which pain is likely to be elicited in a judicial electrocution: the straps, penetration of the brain with electrical current and peripheral stimulation of body tissues (T.424).

As to penetration of the brain with current, Price explained

that in the Florida head to leg electrode system "part of that current, but only a very small part of that current, is likely to get into the brain" (T.425). This current will activate areas of the brain involved in perceiving pain and thus will cause the person to feel pain (T.425). Price has made direct observations of this phenomenon when neurosurgeons or physiologists have placed electrodes deep in the brain and stimulated the brain with electricity (T.426). Such a direct application of electricity to brain cells can cause the person to feel pain (T.426).

Scientific research has identified areas of the brain responsible for perceiving pain (T.435-36; Pet. Ex. 22). If an area of the brain responsible for perceiving pain is directly stimulated with electricity, the person will feel pain even if there is nothing causing a pain to the person's body (T.437, 450).

Some pain centers are located deep below the surface of the brain and some are in the brain stem (T.437-38). The fact that some of the pain centers are deep in the brain is important because during a judicial electrocution, the current density near the top of the brain is much greater than the current density deep in the brain (T.439).

Respiratory centers are also located deep within the brain and are close to the deep pain centers (T.440). Thus, if there is evidence of respiratory actions after an electrocution, it is likely that the pain centers in that area were not instantly and

permanently destroyed (T.440).

Price expressed his opinion that "it is highly, highly unlikely that the initial current surge [in a Florida judicial electrocution] would instantly and permanently depolarize or incapacitate the human brain" (T.430). This opinion is supported by behavioral evidence, neurophysiological evidence and anatomical evidence (T.430). For example, there is evidence indicating that sometimes a pulse is detected after an electrocution ends (T.430). There is no evidence that the brain receives more current than the heart during a judicial electrocution (T.431). The heart and the brain work in part by conducting action potentials (T.433). The presence of a pulse, even if it is irregular and the person is dying, means that the heart maintains some of its electrical properties (T.433). This in turn is evidence that the brain also retains some of its electrical properties (T.433).

Reilly expressed his opinion regarding the effect of judicial electrocution on the human body, identifying six categories of physiological effects: excitation of sensory nerves, excitation of brain neurons, excitation of motor neurons, burning or thermal effects, moleculocellular destruction and excitation of the heart (T.552-53). As to the first category, according to Reilly's research and study, the current density on the tissues of the face would be 2,000 times higher than the

thresholds determined in laboratories for human tolerance of electrical stimulation (T.563). That is, the dose of electricity to facial tissues in a judicial electrocution is 2,000 times more than doses which laboratory experiments have shown people can tolerate without a reaction of pain (T.563-64).

Going to the second category, Reilly concluded that "the current density levels present during both the high-voltage and the low-voltage phase of the judicial execution are both sufficient to result in widespread excitation of motor neurons within the brain" (T.572). "Excitation" means the electrical current would cause the nerve to act as if it were receiving a normal, physiological impulse, and thus the nerve would transmit to the next nerve (T.572). Brain neurons can process impulses on the order of 100 pulses per second, as compared to the alternating current in an execution which has 60 oscillations per second (T.572-73). Thus, the brain neurons can be reexcited by each cycle of current (T.573).

As to the third category, Reilly testified that electric current will excite motor neurons and muscle tissue directly, causing muscles to contract (T.573). With alternating current, this means each impulse going to a motor unit creates a twitch, the minimum response of a muscle unit to a single excitation of a motor neuron (T.574). There will be a succession of twitches, which will ultimately fuse into a great muscle contraction

(T.574). In a judicial electrocution, "these are so rapid and there are so many of these motor neurons being excited that you can fuse these twitches into their maximum state," called tetanus (T.575). Price also identified stimulation of muscles as a source of pain in a judicial electrocution (T.450).

As to the fourth category, Reilly testified he looked at the thermal effect in two areas: head tissues outside the skull and head tissues internal to the skull (T.577). As it passes through tissue, the current agitates the atoms of the tissue, and the agitation is manifested as heat (T.579). In general, thermal damage to the body occurs where current density is the highest (T.580). Duration of the current is also a factor in the amount of thermal damage (T.580-81). The thermal effect would also be greater in places where the resistivity of the tissue is higher (T.581). Price identified burning as a source of pain during a judicial electrocution (T.450).

Reilly concluded that in a Florida judicial electrocution, "the temperature rise during the entire cycle of the execution is insufficient to thermally damage the tissues of the brain" (T.582). That is, brain cells are not destroyed by heat, or "cooked," during a judicial electrocution (T.583). Price testified that he has reviewed histological (microscopic) sections of brain tissue taken from judicially electrocuted persons and has reviewed numerous autopsy reports about such

persons (T.441-43). The histological sections and autopsy reports indicate no microscopic or gross anatomical damage to the brains of electrocuted persons (T.446). Physician's assistant Mathews testified that he went over to Davis as soon as the current was turned off, touched Davis to check for a pulse, and Davis's body was not hot to the touch (T.1037-38).

The fifth category, molculocellular destruction, is "electroporation" (T.583-84). This is due to the direct effects of the electricity creating little pores or holes in the cellular membrane (T.583-84). If the force is strong enough, the pores can become so large and begin to fuse together, creating holes in the membrane big enough for the cell's contents to spill out and cause cell death (T.585). The current densities in the brain are insufficient to cause this effect (T.585). However, in other parts of the body, particularly where there are burns indicating high current density, there would be electroporation (T.585).

As to the sixth category, excitation of the heart, Reilly testified that the heart is a muscle which is directly stimulated by the electricity (T.588). The heart has its own natural electrical activity (T.588). Reilly's analysis of what happens to the heart during a judicial electrocution is that the current is too strong to guarantee ventricular fibrillation of the heart (T.591). In reaching this conclusion, Reilly looked at research on animals, on electrical stimulation applied during open heart

surgery, and on outcomes of electrical accidents (T.593). For the median man, the lower limit of externally applied current which would induce fibrillation is about 200 milliamps (T.593). The higher limit is in the range of several amperes, but if the current goes above that range, it is less likely to cause fibrillation (T.593). Instead cardiac standstill can occur, and with the cessation of the current, the heart can start to beat again (T.____).¹⁵ Thus, there is a window of current in which fibrillation is likely, but below and above that window, fibrillation is unlikely (T.594). Price testified that pain could arise from stoppage of the heart during a judicial electrocution (T.450-51).

b. Respondent's Witnesses

Sperry testified that when 10 amps is applied, "there is instant depolarization, or [the brain cells] are completely overridden or obliterated by this amount of current so the entire brain is depolarized" (T.849). By "instantaneous," Sperry meant "[f]aster than the snap of a finger" (T.849). Sperry testified that 1.2 amps would also cause instant depolarization (T.849). Sperry testified that unconsciousness would be instantaneous (T.850). Sperry based his opinions on the speed electricity travels versus the speed at which pain impulses travel (T.850-

¹⁵Fibrillation is less likely to correct itself, and is thus more dangerous (T. ____).

51).

Sperry testified that in a judicial electrocution, death occurs "within seconds as the brain is heated well above a temperature from which it cannot recover" and that the mechanism of death is that the brain "is heated up to a great degree, even as high as 150 to 160 degrees" (T.851, 873-74). The current also causes the heart to stop (T.851-52). When the current is turned off, "some spontaneous heart movement may begin again . . . [b]ut by that time, the brain is well above the temperature from which it cannot recover" (T.852). Sperry agreed that a heart that is stopped can restart (T.905).

Sperry has done no research regarding survivors of electrocution, but was aware that individuals have survived voltages as high as 100,000 volts (T.881). He was not familiar with the events in the Tafero execution, including the fact that after the application of current, Tafero was seen to take several breaths and the current was restarted, but agreed that such information is significant in reaching a conclusion about electrocution (T.881-84). Sperry was not familiar with any instances of people having high voltage current pass through the brain and retaining consciousness (T.884-85).

Sperry had done no research regarding how brain neurons become polarized and depolarized (T.885). He did not know how frequently a brain neuron can fire in a second (T.886). Sperry

did not know whether a brain neuron is both polarized and depolarized at the same time (T.888). Sperry agreed that brain neurons can be artificially stimulated, causing the person to feel a sensation which is not really occurring (T.889-90, 892, 893). Sperry has done no research regarding how fast brain neurons operate or regarding the overriding effect of electrical current which he described (T.891). The polarization process of the brain neuron is "an element of neurophysiology that is beyond my own particular study" (T.891).

Sperry has done no study of electricity (T.893). He has done no research into how fast the thermal effect of current passing through humans or animals occurs (T.894). Sperry is unable to calculate how fast the thermal effect occurs, although an electrical engineer could do that calculation (T.894). Sperry knows of no studies showing exactly how fast the temperature will rise in the brain during electrocution (T.895). He testified, "To my knowledge, no one's ever done that sort of research. No, I don't think you could" (T.895).

Sperry recognized that current coming into the body through the head electrode would spread out, such that not every square inch would receive 10 amps (T.895). He also recognized that how the current would spread out depends upon the resistance of body tissues (T.896-97). Sperry agreed it was important to know the current pathway in order to determine whether electricity reaches

the heart (T.1009). Sperry assumed that current would reach the heart during a Florida judicial electrocution because the electricity "[w]ent in his head and came out the right leg, so the heart would be within the pathway" (T.1016). Sperry did not know how many amps of current would go through the heart (T.1016-17). Sperry agreed that the thermal effect of current would depend upon the current density at any particular point (T.1012).

Sperry had no information about condemned people exhibiting chest movements after the current was turned off and thus could render no opinion about that (T.998). However, if people observed the condemned exhibiting breathing motions after the current is turned off, "that would mean that at least the brain stem still had some minimal functioning" (T.999).

B.J. Wilder, a neurologist, discussed epilepsy (T.1141-43), electroencephalograms (T.1144-45), the fact that depolarization and repolarization of brain neurons occurs naturally and with artificial stimulation (T.1146-47), and his experience with electroconvulsive therapy a number of years ago (T.1147-50). Wilder opined that the application of 10 amps and 1500 volts to a human body would cause unconsciousness in milliseconds (T.1150-51). According to Wilder, the application of 1500 volts at 10 amps for 8 seconds, 700 volts at five amps for 22 seconds and 1500 volts at 10 amps for 3-1/2 to 4 seconds would cause "massive depolarization of certainly every cell in the cerebral cortex"

(T.1152). This would also cause depolarization of structures deep in the brain, such as the brain stem, and would not allow these cells to recover (T.1152). Wilder opined that within a few thousandths of a second, the person could not receive any sensation (T.1152). A person subjected to the above cycle of current would not be able to perceive pain or other negative sensations once the current was turned off (T.1153).

Wilder was aware that people have survived contact with 70,000 to 100,000 volts and that in many of those instances, the contact with the electricity was with the person's head (T.1161). Wilder was aware of instances where people remember these events (T.1162). Wilder has read about patients who were electrocuted from head to foot and survived (T.1162). Wilder testified that in assessing such reports, "[t]he voltage level is probably not as significant as the current flow, but, again, I'm no physicist. I'm not sure" (T.1163).

Regarding phantom limb pain, in which an amputee feels a pain from a limb which does not exist, the scientific community has not reached a definite conclusion as to where that sensation originates (T.1167). Wilder agreed that external stimulation applied to the brain can produce sensation (T.1167). If the stimulation is applied to the correct area, the brain would feel pain without a pain message having originated in the peripheral nervous system (T.1167-68).

A brain neuron can depolarize a thousand times a second (T.1169). A cell can be stimulated 60 times a second, and each stimulation would provoke a depolarization (T.1170). A cell can repolarize faster than alternating 60 Hertz current changes direction (T.1173).

Regarding individuals who have reported retaining consciousness while contacting 100,000 volts, Wilder testified, "I think it is a discussion that you really -- it is very difficult to pursue because you are talking about massive voltages and currents and you are trying to apply that to a normal physiological situation, and I can't do that" (T.1173).

Wilder was "not terribly familiar with" the concept of current density (T.1178). In the case of current entering through the head electrode and sponge used in a Florida judicial electrocution, Wilder "would have no way of knowing" how much current went into each brain cell (T.1179, 1182). As to the current pathway, Wilder testified, "I think it has preferential pathways" (T.1179). He agreed that if 10 amps come through the head electrode, 10 amps would not pass through each cell but would be dispersed, spreading out through the billions of cells in the brain (T.1179-80). Wilder had done no study comparing the size of electrodes used in electroconvulsive therapy with the size of the head electrode used in a Florida judicial electrocution (T.1183). Wilder testified that although studies

have been done to determine how to guarantee a specific current pathway during electroconvulsive therapy, "you can't really guarantee a certain pathway" (T.1189).

Wilder had not seen any information about judicial electrocutions in which the current cycle was completed, the person was seen moving, and the current cycle was then repeated (T.1183). He had not looked into such events (T.1184). Wilder agreed that breathing motions at the end of an electrocution "could indicate that in the respiratory center in the brain stem that there was -- there was a firing of neurons" (T.1197). One clinical criterion for determining brain death is turning off a respirator and looking for spontaneous return of respiratory functions (T.1156). An "agonal gasp" indicates brain stem activity (T.1198). Wilder believed information about such breathing motions "is not significant" (T.1199).¹⁶

¹⁶Hamilton opined that the delivery of 10 amps of current to the human body with a current path from the head to the leg results in immediate death, immediate loss of consciousness" (T.1079). Hamilton's opinion was that the current path was "from the top of the head through the brain, brain stem, through the center of the body, then exiting out through the electrode on the leg" (T.1079-80). Hamilton did not know if the arcing burns on Davis's face were inconsistent with a continuous flow of electricity from the head through the brain and down to the leg electrode (T.1107-08). Hamilton believed that skin is the most resistant body tissue and did not know how bone "rates in body tissues as far as conductivity" (T.1123).

Timothy Bullard, an emergency physician, testified that dying is a process which is not like turning off a light switch (T.1308). If an electrical cycle of 1500 volts at 10 amps, 650 volts at 4 amps for 22 seconds and 1500 volts at 10 amps for 4

(continued...)

ARGUMENT

ARGUMENT I

**FLORIDA'S ELECTRIC CHAIR AS USED BY THE
DEPARTMENT OF CORRECTIONS CONSTITUTES CRUEL
AND/OR UNUSUAL PUNISHMENT WITHIN THE MEANING
OF THE FLORIDA AND THE UNITED STATES
CONSTITUTIONS.**

A. INTRODUCTION

This Court most recently addressed the constitutionality of Florida's electric chair in its opinion in Provenzano v. State, ___ So. 2d ___, 1999 WL 462600 (Fla. July 1, 1999). The opinions of Justices Pariente and Lewis represented the two deciding votes in that case and thus represent the decision of the Court. In Justice Pariente's opinion joined by Justice Lewis, she stated:

As this Court recognized in Jones, it remains this Court's constitutional responsibility to determine whether the manner in which the method of execution specified by the Legislature is administered constitutes cruel and unusual punishment.

Provenzano v. State, 1999 WL 462600 at 5.

Justice Pariente was referring to this Court's earlier decision in Jones v. State, 701 So.2d 76 (Fla. 1997), in which this Court upheld Florida's electric chair against a constitutional challenge saying:

¹⁶(...continued)
seconds were administered to a person in a head to leg current path, Bullard testified "one would assume that ventricular fibrillation, standstill or respiratory -- complete respiratory depression, complete stoppage of the respiratory drive would occur" (T.1311-12). Bullard had no opinion as to what effect that current would have on the brain (T.1312).

There was substantial evidence presented in this case that executions in Florida are conducted without any pain whatsoever, and this record is entirely devoid of evidence suggesting deliberate indifference to a prisoner's well-being on the part of state officials.

Jones v. State, 701 So. 2d at 79.

Justice Pariente explained the Jones decision in concurring opinion in Provenzano as follows:

Our decision in Jones finding that electrocution in the state's electric chair is not cruel or unusual punishment was based on the state of the record at the time. We relied in Jones on "several significant findings of fact" made by the trial court including that: "Florida's electric chair--its apparatus, equipment and electric circuitry--is in excellent condition," and that "[a]ll inmates who will hereafter be executed in Florida's electric chair will suffer no conscious pain." Jones, 701 So. 2d at 77. I find nothing in our prior opinion in Jones that would preclude this Court from revisiting that decision, should the factual predicate upon which the opinion was based change as a result of subsequently developed evidence.

Provenzano, 1999 WL 462600 at 5.

Justice Lewis, who concurred in Justice Pariente's opinion, wrote separately in Provenzano. Justice Lewis did note that in Jones "[t]he absence of conscious pain was an essential factual element." Provenzano, 1999 WL 462600 at 5. However, Justice Lewis also addressed the fact that there was "at least some credible indication that the Department of Corrections has not followed the protocol specifically established for the death process." Id. In Jones, the circuit court had found that "[c]onsistent with recommendations by the Governor following

Medina's execution, the Department of Corrections has now adopted as a matter of policy written 'Testing Procedures for Electric Chair' and 'Electrocution Day Procedures.'" 701 So. 2d at 77. Subsequently, this Court "direct[ed] the Department of Corrections to follow the previously published protocol for carrying out the execution." Remeta v. Singletary, No. 92,679 (Fla. March 30, 1998). And the majority opinion in Provenzano specifically ordered "DOC to certify prior to the execution of Provenzano and all other inmates under death warrant that the electric chair is able to perform consistent with the 'Execution Day Procedures' and 'Testing Procedures for Electric Chair.'" Provenzano v. State, 1999 WL 462600 at 3.

Justice Lewis in his specially concurring opinion in Provenzano found that the certification obligation imposed by the majority opinion obviated the need for an evidentiary hearing on the Department of Corrections' failure to follow the protocol. He concluded:

We must be ever vigilant to analyze and search for an understanding of the execution procedures to make certain that we walk within the boundaries of constitutional requirements. The indication that there have been variances from the established protocol suggest that the mechanism itself must be subject to question as to its continued validity in constitutional terms. Recognizing that the people of this State have enacted law for the ultimate result of death, it is troubling that the implementation of the process continues to walk the edge of constitutional propriety, thus threatening the entire concept even after the substantial discussion presented by this Court in Jones.

Provenzano v. State, 1999 WL 462600 at 6. Justice Pariente concurred in Justice Lewis' opinion.

Thus, this Court has expressed several areas of concern in the electrocution process in Florida. First, does the manner in which the execution is carried out involve "conscious pain?" In Jones, this Court said "executions in Florida are conducted without any pain whatsoever." Jones, 701 So. 2d at 79. Evidence of conscious pain in the Davis execution undermines the factual predicate of Jones.

Second, in 1997 this Court was led to believe that "Florida's electric chair--its apparatus, equipment and electric circuitry-is in excellent condition." Jones, 701 So. 2d at 77. Was the evidence presented by the State in Jones an accurate assessment? The State's own evidence now shows that the judicial branch was provided inaccurate information in 1997. Not only is the factual predicate for the Jones decision undermined, but also the reliability of any current representations by DOC must be considered impeached.

Third, the protocols were adopted as a means of eliminating human error in carrying out executions in Florida's electric chair. These protocols were offered by the State in the Jones hearings as part of the electric chair--to evaluate the present condition of the electric chair, consideration had to be given to the protocols as part of the method of execution. Testimony was

presented by the State that "Florida's electric chair, as it is to be employed in future executions pursuant to the Department of Corrections' written testing procedures and execution day procedures, will result in death without inflicting wanton and unnecessary pain." Jones, 701 So. 2d at 78. In Remeta, this Court ordered DOC to follow the protocol. In Provenzano, this Court ordered DOC to certify that "the electric chair is able to perform consistent with the 'Execution Day Procedures' and 'Testing Procedures for Electric Chair.'" Yet, the undisputed evidence is that DOC knew the language in the protocol was misleading. DOC's refusal to follow the advice of its own experts and correct the protocol undermines its own credibility, as well as the credibility of the protocols. How then can the certification required by this Court mean anything? This too undermines the factual underpinnings of Jones.

Fourth, the history of DOC conduct in the course of the electric chair litigation presents a disturbing pattern of indifference to the manner of carrying out an execution. Certainly, the State has not been indifferent to appeasing this Court. Representations have been made that have later been disclosed as untrue. But when the truth comes out, DOC maintains that it no longer matters because the problem has been fixed. However, the record belies concern for either the condemned's suffering or his pain-free execution. Again, the evidence

presented below undermines the factual underpinnings of Jones.

B. PAIN

1. Prior to application of electrical current.

Victor Seryutin was the attending physician at Allen Davis's execution. He was called by Provenzano below, and he testified to his observations at the Davis execution:

And I can explain details what I feel, why he have bleeding. When last belt was tied here, tied here, completely, and the - - placed here with mask, he (demonstrating), try to a little bit moving.

Q He tried to struggle is what you're indicating?

A Like this, maybe during this time small vessels broken here. Or he broken by belt, the belt possibly.

Q Because he couldn't get any air possibly?

A Yeah. Yeah.

(T.299-300). Seryutin opined: "I think blood come before electricity go through his body before" (T.300). Seryutin also saw Davis's chest move after the electrocution (T.303). The State had no cross-examination of Seryutin (T.304).

Robert Thomas was called by Provenzano. He testified that his job was to help strap Davis into the electric chair. Thomas indicated that he understood the straps should be pulled "as tight as I can get them" (T.316). He assisted in placing the strap across Davis's mouth. He testified that a photograph (Pet. Ex. 1-K) taken after the execution accurately depicted how the

strap had been placed across Davis's face:

Q How high does the strap go?

A Where it's shown.

(T.319). The photograph depicts the mouth strap up against Davis's nose. It also depicts Davis's head tilted backward against the wooden chair (T.319). In fact, Thomas explained as follows when asked by Judge Johnson:

THE COURT: Let me ask you a question about this other picture.

MCCLAIN: Yes, your Honor. This picture, here?

THE COURT: If you look at that picture, you'll see that the mask covering his mouth is so tight against, it's pushing the nose up to the side, and the blood is then coming directly down on the strap. Was it tightened like that?

THE WITNESS: Yes, sir.

THE COURT: Tightened, and I guess his nose - and pushing it up sideways or something, not a straight push up.

MCCLAIN: This is what it looked like to you?

THE WITNESS: (Nods head.)

(T.328).

When the mouth strap was being tightened on Davis's face, Thomas heard "one moan" (T.330). Thomas also said Davis's reaction was not "out of the ordinary" (T.321). Subsequently, but prior to the commencement of electrical current, Thomas observed blood coming out of Davis's left nostril. Judge Johnson interrupted the direct examination to question Thomas as follows:

THE COURT: What did you do when you heard him moan?

THE WITNESS: Nothing.

THE COURT: You saw blood coming out of his nose, and you did nothing.

THE WITNESS: No, that was a period of time in there. We had already put the headpiece on him, and I had backed away from the chair.

THE COURT: Why didn't you do anything?

THE WITNESS: (Shakes Head.)

THE COURT: Okay.

(T.331).

Numerous other witnesses corroborated the fact that Davis made sounds after the placement of the mouth strap. John Moser described the noise as "a scream with someone having something over their - their mouth. It obviously was a great degree of anguish associated with from the sound of it" (T.181). Other witnesses described it as "Davis made an attempt to - to yell out" (T.197), "a moaning sound or a couple of moaning sounds" (T.217), a "loud, high-pitched noise," or a "squeal" (T.278, 280), a "groan" (T.706).

Donald Price, a neurophysiologist and psychologist at the University of Florida, was called by Provenzano. Price carries out research on pain mechanisms, pain behavior, and pain perception. Price presented un rebutted evidence that the expression shown on Davis's face was one of extreme pain (T.457-60, 465-66). Price explained that studies had been conducted to

assess the presence of conscious pain by looking at body movement and facial expressions (T.454-55). Price said the expression of pain was caused either by the tightening of the straps across Davis's body or the passage of electrical current through Davis's body (T.466). Price also discussed the fact that moans or screams are behaviors indicative of pain (T.451). Price concluded that based upon the photographs and reports of moaning, Davis experienced intense or severe pain (T.466).

Robert Kirschner was called by Provenzano. Kirschner, a forensic pathologist, conducted a postmortem examination of Allen Davis. He testified to the presence of petechial hemorrhages in Davis' eyes and eyelids (T.742). He also examined the photographs of Davis taken right after the execution, while he was still strapped into the electric chair. Kirschner found the reddening of Davis's face above the mouth strap in the photographs to be caused by the congestion in the blood vessels of Davis's face. As Kirschner explained upon questioning by Judge Johnson:

THE COURT: back to Exhibit 1-I, the face.

THOMAS: Do you need this?

THE COURT: Yes. Let him show it to you. You touched on the discoloration of the face. To me sitting here, the face looks purplish.

THE WITNESS: That's correct.

THE COURT: Is that one word you could use? What, in your opinion, is the cause of the face being that color

and in that position assumed?

THE WITNESS: Well, the color is congestion. Tissues are particularly congested in the upper portion of the face because this mouth strap is not only across the mouth, but is also pushing upward, partially obstructing the nose, and it is also producing a lot of pressure around the face and this is causing congestion of the tissues in the upper portion of the face.

(T.607). This congestion depicted in Davis's face above the mouth strap was consistent with partial asphyxiation:

A. The face strap that is around -

Q. Davis?

A. - Davis' face is occluding his mouth and, furthermore, as I say, is pushing up under his nose and it is producing partial asphyxiation during this period of time.

As I say, if one puts one's hands up on your face in this was (demonstrating) with that kind of pressure on the nose, as is visible in the photograph, which is actually crinkling the skin on the nose, and pushing upward and occluding the mouth, in this way you can realize there's at least - he's being at least partially asphyxiated.

(T.747).

Kirschner concluded that Davis suffered conscious pain while he was strapped into the electric chair waiting for the current to be applied:

A. Yes, I have an opinion, that he, in fact, was suffering from conscious pain during that period of asphyxiation, the pain being that of air hunger, which is a very powerful reflex, and a feeling of suffocation is what is occurring.

(T.758).

The conscious pain associated with the placement of the

mouth strap was totally unnecessary. Respondent's witness Walter Zant testified that in Georgia's electric chair straps are not placed across the condemned's nose, mouth or lips (T.1299, 1303). Further, Respondent's witness B. J. Wilder testified that in electroconvulsive therapy muscle relaxants are used instead of restraints. Even Warden Crosby conceded that the mouth strap should not be pulled "as tight as it could be pulled" (T.1365) because "[i]f you pull that thing as hard as you could, you're liable to choke him or break his jaw or something." (T.1366).

2. Pain during the passage of electrical current.

Provenzano called John Wikswo, who opined that the condemned will experience pain in the course of a judicial electrocution in Florida's electric chair (T.653). Wikswo explained the basis for his opinion in considerable detail. This basis included the large number of documented cases in which individuals had survived high voltage electrical accidents, sustained severe burn injuries to the head which established the head had been one of the contact points, and reported memory of severe pain during the electrocution (T.639-47). These documented accounts were read into the record and included harrowing descriptions of the pain associated with electrocution.

Similarly, Price opined that "judicial electrocution results in considerable enormous pain and suffering as well as other negative emotional experiences" (T.423). Price explained the

basis of his opinion in considerable detail. He found several types of evidence lead to his conclusion: behavioral evidence, neurophysiological evidence and anatomical evidence (T.430).

Patrick Reilly, who has researched the effects of electricity on the human body, explained the specific effects of the application of high voltage electricity on the various tissues and cells in the human body (T.552-53). Reilly's testimony provided a foundation for the conclusions made by Price and Wikswo.

Respondent called two expert witnesses to express the opposite view - that death by electrocution in Florida's electric chair is painless because of an alleged instantaneous loss of consciousness. These witness were Kris Sperry (a pathologist) and B. J. Wilder (a neurologist). However, an analysis of their actual testimony exposes the fact that they had no basis for the conclusion, leaving Respondent with no competent or substantial evidence on this point.

Sperry has done no research regarding survivors of electrocution, although he was aware that individuals have survived voltages as high as 100,000 volts (T.881, 902). He agreed that such information is significant in reaching a conclusion about electrocution (T.884). Sperry was not "personally aware" of any instances of people having high voltage current pass through the brain and retain consciousness (T.884-

85). His only explanation for such reports was that in such instances the electrical current somehow passed "in some way as did not go through the brain itself, then by passing the brain, it's not going to depolarize the brain" (T.885).¹⁷

Sperry has done no research regarding how brain neurons become polarized and depolarized (T.885). He did not know how frequently a brain neuron can fire in a second (T.886). Sperry did not know whether a brain neuron is both polarized and depolarized at the same time (T.888). Sperry agreed that brain neurons can be artificially stimulated, causing the person to feel a sensation which is not really occurring (T.889-90, 892, 893). Sperry has done no research regarding how fast brain neurons operate or the alleged overriding effect of electrical current which he described (T.891). The polarization process of the brain neuron is "an element of neurophysiology that is beyond my own particular study" (T.891).

Sperry has done no study of electricity (T.893). He has done no research into how fast the thermal effect of current passing through humans or animals occurs (T.894). Sperry was unable to calculate how fast the thermal effect occurs. (T.894). Sperry knows of no studies showing exactly how fast the

¹⁷Dr. Sperry did testify that the skull possesses 50,000 ohms of resistance. (T. 1008). He further acknowledged that under ohms law is was a simple mathematical calculation to determine the amperage that would penetrate 50,000 ohms of resistance if the the voltage was known. (T. 1013).

temperature will rise in the brain during electrocution (T.895). He testified, "To my knowledge, no one's ever done that sort of research. No, I don't think you could" (T.895).

Sperry had no information about condemned people exhibiting chest movements after the current was turned off and thus could render no opinion about that (T.998). However, if people observed the condemned exhibiting breathing motions after the current is turned off, "that would mean that at least the brain stem still had some minimal functioning" (T.999).

Wilder discussed epilepsy, electroencephalograms, the fact that depolarization and repolarization of brain neurons occurs naturally and with artificial stimulation, and his experience with electroconvulsive therapy a number of years ago. Wilder was aware of instances where people have survived contact with 70,000 to 100,000 volts (T.1161). He was also aware that in many of those instances, the contact with the electricity was with the person's head (T.1161). Wilder was aware of instances where people remember these events and has read about patients who were electrocuted from head to foot and survived (T.1162). Wilder testified that in assessing such reports, "[t]he voltage level is probably not as significant as the current flow, but, again, I'm no physicist. I'm not sure" (T.1163).

Wilder agreed that external stimulation applied to the brain can produce sensation (T.1167). If the stimulation is applied to

the correct area, the brain would feel pain without a pain message having originated in the peripheral nervous system (T.1167-68).

Wilder was "not terribly familiar with" the concept of current density (T.1178). In the case of current entering through the head electrode and sponge used in a Florida judicial electrocution, Wilder "would have no way of knowing" how much current went into each brain cell (T.1179, 1182). As to the current pathway, Wilder testified, "I think it has preferential pathways" (T.1179). He agreed that if 10 amps come through the head electrode, 10 amps would not pass through each cell but would be dispersed, spreading out through the billions of cells in the brain (T.1179-80). Wilder had done no study comparing the size of electrodes used in electroconvulsive therapy with the size of the head electrode used in a Florida judicial electrocution (T.1183). Wilder testified that although studies have been done to determine how to guarantee a specific current pathway during electroconvulsive therapy, "you can't really guarantee a certain pathway" (T.1189).

The basis for Wilder's opinion completely fell apart when he was asked about individuals who have reported retaining consciousness while contacting 100,000 volts. Wilder testified:

Q. So the individuals who have reported consciousness during 100,00 volts, your conclusion is they could not - their brain could not have been recovering because of that 60 Hertz cycle?

A. I think that this is an argument or a discussion that you really can't - I think it is a discussion that you really - it is very difficult to pursue because you are talking about massive voltages and currents and you are trying to apply that to a normal physiological situation, and I can't do that.

I know that there are people that have big lightning strikes and may not have lost consciousness, but I can't apply that one thing to the vast majority of evidence that says that says that when you get struck on the head with a big jolt of lightning, you get knocked unconscious.

I just can't take a single individual and try to equate that into normal physiological experiments because there's no - there's such a magnitude of difference that you can't talk about them.

(T.1173-74). This is like a scientist in 1495 saying: "well just because Columbus sailed to the new world doesn't mean anything. That was just one individual's experience."

Respondents' experts had no explanation for the documented cases reported by Wikswo where individuals not only survived high voltage electrocution, but did not lose consciousness and reported intense pain. There is no competent or substantial evidence to support a finding that there is instantaneous loss of consciousness in a judicial electrocution and thus no pain.

C. ELECTRICAL APPARATUS

Ira Whitlock first became involved "with the Department of Corrections and the electric chair [] in 1997" (T.1240). He was hired to repair the chart recorder after the Medina execution. After the repair was completed, Whitlock recommended that DOC

replace the chart recorder (T.1241). The chart recorder was in fact not replaced until April 1998.

In January 1998, Whitlock rebuilt a spare breaker for the electric chair, although he apparently did not bill for it until he was under contract (T.1236, Exh. 24 Doc. 12). In June 1998, Whitlock was given a contract with DOC to service the electric chair, establish a preventive maintenance program and be available to testify in court (T.1229, Exh. 24 Doc. 35 and 44). Another breaker job was done in June 1998 (T.1237). Yet again on January 14, 1999, a breaker was tested and replaced with a backup (T.1237). In February 1999, Whitlock wrote a letter recommending replacing the existing breakers, which he described as "obsolete" (T.1239-40).

Whitlock was called by the State as a licensed electrical engineer who was familiar with Florida's electric chair (T.1208). Whitlock testified:

As I indicated, the maintenance program was not established for this equipment from its inception or installation in 1960 until I established one in 1997. So the equipment was basically in a state of disrepair simply from neglect.

It still operated: but when you don't perform preventative maintenance for that period of time, you are going to have an accumulation of problems that you need to address, and that's what we did.

(T.1251).

Thus, the State's own evidence establishes that in 1997 this Court was misled into believing that "Florida's electric chair -

its apparatus, equipment and electric circuitry - is in excellent condition." Jones, 701 So. 2d at 77. In fact, the equipment was "in a state of disrepair simply from neglect" (T.1251). The factual predicate of that opinion was premised upon false representations by the State. The State, according to Whitlock, has attempted improve the condition of the equipment in the interim, but this Court was nonetheless misled in 1997. This disclosure requires this Court to give no deference to the Jones decision because it was premised upon false information. Moreover, DOC's conduct in this regard must be considered in evaluating its evidence now, as explained infra.

D. PROTOCOL

1. Language prescribing voltage and amperage.

James Crosby, the Warden at Florida State Prison, assumed that position in early March of 1998. During the four executions in March 1998, Warden Crosby became concerned that the chart recordings demonstrated a problem in following the protocols. He noticed that "[w]hat was showing on the chart recording was not the . . . numbers that I was reading in the protocol" and he "certainly had a question about it" (T.1344-45).¹⁸ He sought

¹⁸Respondent called Robert Hallman, an electrical engineer who had examined the chart recordings from the last five executions. When asked during cross-examination about the language in the protocol, he indicated that he had not known that the prescribed voltage and amperage levels were supposed to be obtained during an execution. (T. 1277). He acknowledged that
(continued...)

advise from experts hired by the State, Jay Wiechert and Ira Whitlock. They advised that language in the protocol was poorly written and needed to be changed.

In fact, Jay Wiechert testified below that the protocol "is not well written. We cannot specify both volts and amps. . . . [I]t is unfortunate that protocol is written the way it is." (T.983). Wiechert testified that in writing the protocol, "we made a mistake from the beginning trying to be too technical" and "we really need to rewrite that." (T.984). Wiechert had not examined the chart recordings of any execution other than Allen Davis; however at that execution, he acknowledge that the voltage level was about 60% of the voltage specified in the protocol. (T.979-80). Wiechert agreed that the voltage measured during the Allen Davis execution was not what is provided for in the "Execution Day Procedures." (T.967).

Whitlock testified that the protocol language on voltage and amperage "misrepresents the intended function of the equipment" (T.1242-43). Whitlock recalled discussing the language in the protocol with Susan Schwartz, Assistant General Counsel for DOC, and Tom Crapps, Assistant General Counsel to Governor Chiles. As

¹⁸(...continued)
during the second cycle of the four executions in March 1998, the amperage level in the second cycle was 73% of that prescribed in the protocol. (T. 1279). He also recognized that voltage levels in the four executions were below the levels prescribed in the protocol. (Resp. Exh. 16).

to the content of the discussion, Whitlock testified:

Q. My question was, did you advise them that that language should be changed?

A. Yes. As an engineer, upon reviewing that language, I could see where it could be erroneous, so I did advise and recommend that the language to be changed.

Q. And did they ask you to submit how you would change the language or did you ever draft anything along those lines?

A. No. They didn't want me to recommend a change in language.

Q. They did not want you to recommend a change in language?

A. No, sir.

(T.1245).

Warden Crosby remembers drafting a proposed change to the language in the protocol (T.1345). Crosby drafted Petitioner's Exhibit 24, Number 66 because "I had a concern about the meter readings that were chart recorded not matching what I was reading here. I've been given orders by the courts on the last, I think, execution, to follow the protocol" (T.1349-50). Crosby elaborated:

Now when we ran the tests, the tests showed those numbers. When we did the execution, the chart did not show those numbers. As a lay person, I was concerned about those numbers not matching.

(T.1350). A meeting was held to consider Crosby's proposed change in the protocol. Present at the meeting were attorneys Ken Nunnelley, Susan Schwartz, and Tom Crapps (T.1351-52). Two

or three days later, Lou Vargas informed Crosby that the decision had been made not to change the protocol (T.1353).

After Davis was executed, Whitlock signed an attestation that he observed no anomalies during the execution. At the hearing below, Whitlock explained this written statement that he saw no anomalies during the execution:

Q. When you use the phrase "no anomaly," does that include the fact that the voltage level was 60 percent of what the protocol called for?

A. I believe in my testimony earlier, I disagreed with the language of the protocol. The language of the protocol evidently was written by a lay person, not an engineer not familiar with it. So it is going to be erroneous by its own nature.

I know the design and operation of the equipment, and it operated in accordance with its design.

Q. Ignoring the language in the protocol, there was no anomaly?

A. That is correct.

(T.1250).

When Provenzano initiated the instant habeas proceeding after the Davis execution, he noted that the problematic language in the protocol had not been followed in carrying out the execution. Richard Martell, Chief, Capital Appeals for Attorney General, signed a response which stated:

As to the voltage administered, Provenzano's allegations are apparently based upon his own counsel's interpretation of the chart recordings and are squarely contradicted by the attestations by Warden Crosby and engineer Whitlock, previously supplied to this Court. Engineer Whitlock has attested that he was present in

the electrical equipment room during Davis' electrocution and personally observed the monitoring equipment, and that he observed no anomalies.

(Response to Petition, filed July 8, 1999, at 2).

According to Martell's representations to this Court, Provenzano's allegation regarding the deviation from the protocol reflected in the chart recordings from the Davis execution and Whitlock's attestation that there were no anomalies "are squarely contradict[ory]." And the evidence now clearly establishes that Provenzano's allegation was not just an allegation - it was fact. As Martell pled, that means the attestations were inaccurate and misleading, but as Whitlock testified, the attestation was a product of the directive given him to ignore the problematic language in the protocol. This demonstrates that DOC and the State of Florida have taken neither the protocol nor this Court's concern that the protocol be followed seriously. The attestations and certifications required by this Court have been and are meaningless. DOC knew that the protocol needed to be rewritten, knew that this Court directed it to follow a protocol that could not be followed, but yet instructed the warden and the engineer to ignore the problem and swear under oath that the protocol could be followed and that there were no anomalies.

2. Tightness of straps not addressed in protocol.

The "Execution Day Procedure" which was introduced as Exh. 8 does not address how tight the straps are to be pulled when

placed upon the condemned. Robert Thomas, one of the individuals assigned to tighten the straps, testified that his understanding was that he was to pull the straps "as tight as I can get them." (T.316). Warden Crosby acknowledged that the straps should not be pulled "as hard as you could, you're liable to choke him or break his jaw or something." (T.1366). He testified: "I would not expect it to be pulled as tight as it could be pulled." (T.1365). Thus, it is clear that following the protocol is no guarantee that conscious pain will not be inflicted in the course of an execution since the protocol fails to advise the execution team that the straps should not be pulled as tight as possible.

Ken Nunnelley in his closing argument acknowledged changes needed to be made and were going to be made by Warden Crosby (T.1403). However, there is no evidence in the record what changes exactly will be made. Based upon the record right now, it is clear that the compliance with the protocol does not preclude infliction of conscious pain.

3. Placement of head electrode.

Wilder, an expert witness called by the State, acknowledged that he was aware of cases "where people were electrocuted [], on the side of the head, et cetera, that they did remember being struck." (T.1162). Wilder stated "I really think that we ought to be specific in where it enters the head or how this enters the head or what the particular situation is." (T.1162). Thus, at

to the issue of instantaneous loss of consciousness and memory, Wilder testified:

Q. Well, do you understand why they are able to recall the event and [sic] these reported instances?

A. I think this depends totally, in all probability, on where the entry point is and where the exit point is as to whether they remember or not.

(T.1163). Since Wilder was aware of individuals retaining consciousness when the entry point was the side of the head, obviously according to him, precision in the placement of the head electrode is important to guarantee loss of consciousness.

However as the State established below through its re-direct examination of A. D. Thornton:

Q. The protocols don't specifically require or state that the headpiece must be placed on the crown of the inmate's head, do they?

A. No, sir.

(T.841-42). The purpose of this testimony was to establish that DOC had not violated the protocol when the execution team failed to place the head electrode on the crown of Davis's head.

Postmortem examination of Davis's body established that burns marking the location of the current's entry into Davis was "low on the forehead." (T.899).

Thus, the protocol does not guarantee the placement of the head electrode in a fashion necessary, according to the State's experts, to guarantee instantaneous unconsciousness. As a result, the protocol cannot eliminate unnecessary pain.

4. Ignorance of protocol.

William Dotson, the inspector supervisor for DOC's inspector general's office, was assigned to attend the Davis execution. He was given the responsibility of taking possession of the head and leg sponges following the execution (T.246). Dotson testified "I don't really have any idea [why the sponges are collected], except that's what we were instructed to do following the Leo Jones hearings" (T.246). He decided to take pictures of Davis after the execution because "the nosebleed that he apparently suffered appeared to be unusual, and I felt that it needed to be documented" (T.248). He had not been provided the "Execution Day Procedure" and did not know of its existence prior to his testimony (T.245, 258). The "Execution Day Procedure" specifically provides for a person to function as the collector of the sponges, Dotson's assigned part (T.259). After reading paragraph Q of that protocol, Dotson reported: "I've never read it, but that is essentially the instructions I was given" (T.259). He indicated: "Today is the first time I've seen that document" (T.264).

The protocol called for Dotson "to photograph narrow and specific electrode contact points only" if "an unusual/ problem should occur during an execution" (T.262). However, Dotson, who had never been provided the protocol, photographed what he "believed to be relevant at the time" (T.264). No photograph was

taken of the leg contact point (T.265).

Obviously, the protocol was not taken very seriously if one of the individuals with an assigned specific function did not know of the protocol and had never seen it. As a result, a photograph of the leg contact point required under the protocol was not taken. Beyond that, it is unknown what evidence was lost because Dotson had no idea why his presence was required. In order for the evidence a crime scene technician collects to have value, he must know the "why" so that the evidence is properly collected. Dotson's function was clearly comparable to a crime scene technician, but he did not know why he was there, let alone the language in the protocol which defined his role.

Similarly, Warden Crosby demonstrated ignorance of language in the protocol regarding the saline solution in the sponges used during an electrocution. Crosby testified that he once asked an electrical engineer if there could be too much water on the sponge, and the engineer told him "no. Water is your friend. You can mop up whatever extra there is" (T.1331). The "Execution Day Procedures" direct, "As the head piece is secured, any dripping/running saline solution shall be dried with clean towels." (Pet. Ex. 8). In Davis's execution, Crosby could not say whether or not the amount of water dripping from the headpiece was more than usual because "I haven't got a barrier [sic] for usual" (T.1371-72). The water dripping on Davis

resulted in burns and in current passing outside his body, which contributed to his experiencing conscious pain.

E. COURSE OF CONDUCT

In responding to Provenzano's argument in circuit court regarding the course of DOC's conduct, Ken Nunnelley made the following remarks in his closing argument:

The point being, there is ample overwhelming evidence in this record of the Department of Corrections' good faith in a sincere, concerted, committed effort to carry out their duty in executing a sentence of death in a professional, dignified and humane way.

They have initiated a maintenance program that the testimony - the testimony was, is far and away far more than what is typically found in an industrial setting.

They have the protocols. There is - they have done everything they can do to follow those protocols to the letter. They do tests. They do maintenance. We heard all of that testimony. And I'm not going to go over it.

But you know, they even had a meeting over the protocols shortly after Warden Crosby came in. And I don't remember what the meeting was exactly. There was testimony about it.

But that's evidence, your Honor, of good faith and an effort to act and operate and perform their duties and responsibilities in a professional, competent above-board manner.

It's not evidence of some kind of bad faith or any nefarious purpose. And you know, quite honestly, to try to ascribe some negative purpose to it is sort of - is, you know, it makes no sense. It's like criticizing somebody for trying to do a good job, and we all know that's not the way things should be.

(T.1401-02).

Respondent's assertion of good faith by DOC is belied by the evidence. First, Robert Thomas saw the blood and did nothing about it. Warden Crosby has acknowledged that this was wrong and should not have happened.

Second, the entire execution team ignored the sounds made by Davis, which have been variously described as moans, groans, muffled screams, and squeals. The only explanation given for ignoring Davis's effort to communicate was it was nothing out of the ordinary.

Third, the protocol, which was adopted as a result of past problems, was not corrected when State experts advised that its language needed to be changed. When chart recordings from the March 1998 executions showed that the language in the protocol had not been followed, DOC determined that the problem was the protocol, not the chart recordings. Even though the chart recorder was replaced, it was not because the old one had produced inaccurate results. Warden Crosby testified: "No. My model T drove fine. I just wanted a better model" (T.1357). Yet, Respondent advised this Court during the June 29, 1999, oral argument in Allen Davis's case that chart recorder was replaced because the chart recordings were inaccurate. Now, Respondent asserts there was no problem with the chart recordings.

Fourth, the protocol was generally ignored. Individuals with defined roles to play under the protocol were not provided

with the protocol. Crosby and the execution team seemed unaware of the language in the protocol requiring excess saline solution to be wiped up prior to the start of the electrical current. Excess saline solution was clearly present on Davis's face and body, and it provided a current pathway outside Davis's body.

Fifth, the circumstances arising in the Davis execution demonstrate that the protocol fails to address matters which will affect whether the condemned feels conscious pain. In other words, following the protocol does not guarantee that there will be no pain. The protocol does not address how tight to secure the straps used to hold the condemned in the electric chair. Crosby recognized that the straps could be pulled too tightly and cause pain and injury. Yet, the protocol does not speak to this issue. According to Respondent's witness Walter Zant there is no need for a mouth strap to cover the mouth, let alone partially occlude the nose. Further, the protocol does not address the precise placement of the head electrode, other than on the head. The State's own experts recognized that current bypassing the brain would not induce unconsciousness and could lead to the sensation of pain. The head electrode was not placed upon on the crown of Davis's head, but instead on his forehead. Yet, the protocol is silent on this issue.

Finally, as much as Mr. Nunnelley sought to bestow an 'A' for effort, that is not the issue. Whether DOC is trying to

carry out "a sentence of death in a professional, dignified and humane way" does not matter. The point is that the Davis execution, as evidenced by the photographs, was not "professional, dignified or humane."

The pattern of anomalies in judicial electrocutions in Florida, beginning with Tafero's execution in 1990, demonstrates that DOC should not be permitted to continue tinkering with electrocution and revising its explanations for problems. Executions in Florida have become a grotesque example of Murphy's Law: if something can go wrong, it will.

After Tafero, this Court was assured that the problem was the synthetic sponge, and that DOC henceforth would use a natural sea sponge, eliminating the risk of flames and smoke. That solution proved inadequate in Pedro Medina's execution, after which this Court was assured that the problem was that the sponge was not wet enough. DOC thereafter adopted a protocol to ensure, among other things, the sponge would be wet enough.

Now we are faced with Davis's execution, where the dripping wet sponge actually caused burning and mutilation on Davis's face, and where the mouth strap began asphyxiating Davis before the electrocution. Respondent assures this Court that there was no problem in Davis's execution, and that he simply had a nosebleed. Again, Respondent promised the lower court that changes would be made.

Now, this Court will be assured that, in the future, the problems occurring during Davis's execution will be corrected. Notwithstanding whatever quick fix DOC promises to implement this time, DOC has repeatedly demonstrated it is unable to carry out judicial electrocutions free of unnecessary pain and mutilation. Far from the "dignified, professional and humane" death trumpeted by Respondent, executions in Florida have become a spectacle marked by smoke, flames, screams and blood.

F. CONCLUSION

The evidence, most of which is undisputed, clearly establishes that the basis of this Court's conclusions in Jones are gone. The foundation of that case has been swept away. Florida's electric chair in its present condition constitutes cruel and/or unusual punishment.

ARGUMENT II

FLORIDA'S CURRENT USE OF JUDICIAL ELECTROCUTION AS ITS SOLE METHOD OF EXECUTION IS UNCONSTITUTIONAL BECAUSE IT VIOLATES THE EVOLVING STANDARDS OF DECENCY THAT MARK THE PROGRESS OF A MATURING SOCIETY.

The lower court took judicial notice of two statutes showing that the states of Kentucky and Tennessee have enacted laws rejecting judicial electrocution as the sole method of execution (T.20-21; Pet. Exs. A, B). The lower court also took judicial notice of the Supplemental Report of the Florida Corrections Commission and the Florida Corrections Commission 1997 Annual Report (T.22-24). The Corrections Commission conducted a

detailed study of execution methods and recommended the legislature enact a lethal injection option for carrying out death sentences (Pet. Ex. C).

Only four states -- Florida, Alabama, Georgia and Nebraska - require execution by judicial electrocution. Seven states have rejected the use of the electric chair in the past five years.

Reports indicate that, to some extent, the legislatures of Kentucky and Tennessee were motivated by humanitarian concerns. After hearing about the botched execution of Pedro Medina in March 1997, these states did not want their condemned subjected to the same risks of unnecessary pain, mutilations and lingering death as prisoners in Florida. Now that only four states mandate use of the electric chair, it is clear that Florida's continued operation of the electric chair as its sole method of execution is unconstitutional because other states made aware of the unnecessary pain, mutilation, and freak show atmosphere attendant to Florida executions where flames, smoke, or blood can erupt without warning, have switched their method of execution. Florida's use of judicial electrocution is inconsistent with society's evolving standards of decency. As Justice Shaw wrote: "Execution by electrocution is a spectacle whose time has passed -- like the guillotine or public stoning or burning at the

stake." Jones, 701 So. 2d at 87 (Shaw, J., dissenting).¹⁹

Florida's constitutional prohibition against cruel or unusual punishment is implicated by Florida's continued use of the electric chair. This Court must examine Provenzano's claim that judicial electrocution is unusual under the former cruel or unusual clause in Florida's Constitution. This claim implicates a substantive right, and cannot be changed by constitutional amendment. This Court has so held in Brennan v. State, No. 90,279, slip op. (Fla. July 8, 1999), in which this Court held that execution of a person who was 16 years old violated Florida's prohibition against cruel or unusual punishment. At the time Provenzano was convicted and sentenced to death, the constitutional prohibition was against cruel or unusual punishment.

The Supreme Court has indicated that contemporary society's attitude toward a particular punishment should be measured by as

¹⁹A long line of United States Supreme Court cases states that an inquiry into evolving standards of decency is required as part of Eighth Amendment analysis. See, e.g., Hudson v. McMillan, 503 U.S. 1, 7 (1992)(holding that Eighth Amendment prohibition against cruel and unusual punishment "draws its meaning from the evolving standards of decency that mark the progress of a maturing society")(citing Rhodes v. Chapman, 452 U.S. 337, 346 (1981)(quoting Trop v. Dulles, 356 U.S. 86, 101 (1958)(plurality opinion)); Estelle v. Gamble, 429 U.S. 97, 102 (1976). See also Gregg v. Georgia, 428 U.S. 153, 173 (Steward, Powell & Stevens, J.J.); Weems v. United States, 217 U.S. 349, 378 (1910)(holding that the Eighth Amendment is "not fastened to the obsolete, but may acquire meaning as public opinion becomes enlightened by a humane justice").

much objective evidence as possible. See Penry v. Lynaugh, 492 U.S. 302, 331(1989); Stanford v. Kentucky, 492 U.S. 361, 369 (1989); McCleskey v. Kemp, 481 U.S. 279, 300 (1987); Enmund v. Florida, 458 U.S. 782, 786-88 (1982); Coker v. Georgia, 433 U.S. 584, 592 (1977). According to the Supreme Court, "[t]he clearest and most reliable [objective] evidence of the contemporary values is the legislation enacted by the country's legislatures." Penry, 492 U.S. at 331. Accord Gregg, 428 U.S. at 181.

The Supreme Court has held punishments to be violative of the Eighth Amendment based in part on evidence of a legislative consensus rejecting the type of punishment at issue. See, e.g., Thompson v. Oklahoma, 487 U.S. 815, 826-30 (1988)(invalidating capital punishment for offender under age 16 where 19 of 37 state legislatures rejected the practice); Enmund, 458 U.S. at 788-96 (holding death penalty unconstitutional for certain type of felony murder where, of 36 death penalty jurisdictions, "only" 8, a "small minority," allowed capital punishment for such offense); Coker, 433 U.S. at 593-97 (invalidating capital punishment for rape where only one state imposed death for rape of adult victim and only three imposed it for any rape).

Since 1997, two additional states using judicial electrocution exclusively have rejected the method. Now only three states out of the 38 states that impose capital punishment follow Florida's lead. Of those, Nebraska's legislature has

recently voted for a moratorium on executions. The overwhelming rejection of Florida's method of execution indicates that Florida's manner of execution by judicial electrocution no longer comports with evolving standards of decency and is therefore unconstitutional.

ARGUMENT III

THE LOWER COURT MADE NUMEROUS ERRONEOUS EVIDENTIARY RULINGS THAT CUMULATIVELY DENIED A FULL AND FAIR HEARING.

The lower court's erroneous evidentiary rulings prevented Provenzano from presenting relevant testimony and exploring permissible inquiry on cross-examination, contrary to due process.

A. PRECLUSION OF WITNESSES

1. Thomas Crapps

Counsel sought to present the testimony of Thomas Crapps regarding a conversation with Ira Whitlock about the proposed change in protocols by DOC (T.518). Crapps' testimony regarding this conversation should have been permitted because of its relevance to Provenzano's claim that the protocol was not being followed, that the State was aware of this, and that Crosby held a meeting regarding this (T.1351). Shortly after the conversation with Crapps, Whitlock sent a memo to DOC regarding the protocol (T.522-3). Crapps' testimony was pertinent to the issues:

I wanted to be able to talk to Mr. Crapps and

present his testimony regarding the sequence of events as to [whether] there was a proposal to change the protocol.

Instead of changing the protocol, Ira Whitlock submitted this memo; and this memo, as you can see from the accompanying letter that you have there, was disclosed by Susan Schwartz after consultation with the Attorney General's office. It was not within the work product privilege.

(T.523). However, the State argued, and the lower court accepted, that Crapps' testimony was protected by the attorney-client privilege (T.8-9, 518-524).

The lower court erred. Firstly, any conversation between Crapps and Whitlock is not covered by the attorney-client privilege. The conversation in question constituted an exchange between an employee for the Governor and an independent contractor for DOC regarding protocols for the electric chair, which DOC was responsible for devising and following. Crapps' client was the Governor, not Whitlock. It is a client's communication with his attorney that is privileged, not a third party's communication with the client's attorney.

In fact, after the circuit court's ruling, Whitlock was permitted to testify, over the State's objection based on attorney-client privilege, as to whether Crapps asked him about the manner in which he would change the protocol (T.1244-1245). Clearly, Crapps' conversation with Whitlock was not privileged, in light of Susan Schwartz' memorandum indicating that the privilege was not being asserted.

Secondly, this Court ordered an open-file policy regarding documents pertaining to the electric chair (T.522); Provenzano v. State, 1999 WL 462600 at 4. It is counter productive to this Court's ruling to permit an open-file on documents, but not to the conversations resulting in, or having a direct bearing upon, the production of those documents.

2. Richard Martell.

Counsel sought to present the testimony of Richard Martell regarding his statements at the June 29th oral argument that the chart recorder was replaced in April, 1998 as a result of inaccurate chart recordings in March, 1998 (T.6, 517). The State objected and moved for a protective order based on the fact that this "is merely statement of counsel at oral argument" (T.7, 517-18) and that "[t]his is no more than a last-minute attempt to knock out one of the State's lawyers for no good reason in an effort to cripple the State" (T.7).

Counsel informed the court that according to Scott v. State, 717 So. 2d 908 (Fla. 1998), this Court had determined that the assistant state attorney handling the 3.850 evidentiary hearing could properly be called as a witness in the proceeding, without being disqualified (T.7). The court granted the motion for protection (T.518).

The lower court erred. Martell's statements at the oral argument appear to indicate that he had specific factual

knowledge as to why the chart recordings were replaced. Therefore, Martell's knowledge of this issue had a direct bearing on the evidentiary hearing. Moreover, Martell's statements directly contradict the testimony of James Crosby at the evidentiary hearing (T.1357).

The reason the chart recordings were replaced is a material fact. Provenzano should have been permitted to call Martell as a witness.

B. PRECLUSION OF TESTIMONY

At the evidentiary hearing, Provenzano attempted to elicit certain testimony from Rabbani Muhammad, a witness to the 1998 execution of Leo Jones (T.115). The substance of the excluded testimony was that Muhammad and Jones had agreed that Jones would send a non-verbal signal to Muhammad if he had any difficulties breathing during the execution process (T.142). Further, the proffered testimony revealed that Jones in fact gave the signal, which involved Jones moving his finger up and down after being strapped into the electric chair (T.143). The state's hearsay objection to this testimony was sustained (T.115).

Fla. Stat. 90.804(2)(b)(1999), allows "evidence to be admitted in the absence of cross examination and confrontation of the declarant, but under justifications of public necessity and manifest justice." State v. Weir, 569 So. 2d 897, 902 (Fla. 4th

DCA 1990).²⁰ Among the justifications for admissibility is that "impending death makes a false statement by the decedent improbable." Weir, 569 So. 2d at 899. Because Leo Jones was faced with imminent and certain death, his statement to Muhammad regarding the "cause or instrumentality" of his death should have been admitted.

Section 90.803(3), Florida Statutes allows for the admissibility of "a statement of the declarant's then existing state of mind, emotion, or physical sensation, including a statement of... pain, or bodily health..." in order to "...prove the declarant's state of mind, emotion, or physical sensation at that time..." When the declarant's "state of mind, emotion, or physical sensation" is at issue in the proceeding in which it is sought to be introduced, a statement indicative of such should be admissible. Downs v. State, 574 So. 2d 1095 (Fla. 1991), Pacifico v. State, 642 So. 2d 1178 (Fla.App. 1 Dist. 1994). Jones' state of physical sensation and emotion was relevant in that it was consistent with evidence presented at the hearing showing that Allen Davis was asphyxiating after the mouthpiece was put in place. The "physical sensation of pain" in the condemned was one of the central issues at the hearing below and, thus, Muhammad's testimony should have been admitted.

²⁰Weir's reasoning was approved in Weir v. State, 591 So. 2d 593 (Fla. 1991).

C. PRECLUSION OF CROSS-EXAMINATION

Counsel sought to cross-examine state witness Thornton:

Q: As the Assistant Superintendent of Florida State Prison are you aware of a code of silence of prison personnel?

(T.840). The State objected to relevancy (T.840). Counsel asked to argue, but the State objected again, on the ground of "political statement" (T.841). Counsel attempted to state the reason his question was admissible: it was cross-examination going to motive and bias of witnesses. Again, the State objected to counsel's argument. The court sustained the objections. This was error that prevented a proper legal argument regarding the admissibility and relevance of evidence of witness motive and bias. See Pender v. State, 432 So. 2d 800 (Fla. 1st DCA 1983). Further, Rule 1.450(a) of the Florida Rules of Civil Procedure requires the court to take and report the evidence in full unless it clearly appears that the evidence is not admissible on any ground. Under Davis v. Alaska, 415 U.S. 308 (1974), the cross-examination was proper. Newspaper accounts recently have reported on a code of silence within DOC in connection specifically with the homicide of death row inmate Frank Valdes. The cross-examination should have been allowed to explore the bias of DOC employees, including Thornton. Because the court failed to allow the Petitioner to articulate his legal argument, to proffer the evidence he wanted to introduce, or to properly

record excluded evidence for review, the Petitioner was denied a full and fair hearing.

ARGUMENT IV

**THE LOWER COURT ERRED WHEN IT STRUCK
PETITIONERS MILFORD WADE BYRD, EDUARDO LOPEZ,
MCARTHUR BREEDLOVE, JERRY HALIBURTON, GREGORY
KOKAL, AND TOMMY GROOVER FROM THE AMENDED
PETITION.**

Upon objection by the Respondents, the lower court struck Petitioners Byrd, Lopez, Breedlove, Haliburton, Kokal, and Groover from the "Amended Petition For Writ Of Habeas Corpus And Petition To Invoke This Court's All Writs Jurisdiction And Petition for Extraordinary Relief" (T.24-28). Pursuant to this Court's Order of July 8, 1999, Provenzano amended his petition to include as petitioners the above-named death-sentenced inmates who are in jeopardy of electrocution in Florida's electric chair. Under Brown v. Wainwright, 392 So.2d 1327 (1981), the additional Petitioners should not have been struck. There was no disparity between the factual and legal issues.²¹ Each raised the identical claim on identical facts. Considerations of judicial economy must be paramount according to Brown. Since the Petitioners added to the Amended Petition stand on all-fours with Provenzano regarding the issue raised in his Petition, they should not have been struck.

²¹In Brown, this Court found disparity between the Petitioners as to the factual basis for the individual claims.

Although the court characterized the additional Petitioners as "interlopers," Rule 1.250(c) of the Florida Rules Of Civil Procedure contemplates that parties may be added to an action by amendment without further order of the court. The stricken Petitioners should be reinstated.

CONCLUSION

The circuit court's order is contrary to the law and facts. Based upon the amended petition, the record and the discussion in this brief, Petitioner urges this Court to grant relief.

I HEREBY CERTIFY that a true copy of the foregoing Initial Brief has been furnished either by United States Mail, first class postage prepaid/ Federal Express/ facsimile transmission/ and/or hand delivery to all counsel of record on August 9, 1999.

MARTIN J. MCCLAIN
Florida Bar No. 0754773
Special Assistant CCRC

HARRY P. BRODY
Florida Bar No. 0977860
Assistant CCRC-Middle

TODD G. SCHER
Florida Bar No. 0899641
Litigation Director
CAPITAL COLLATERAL REGIONAL
COUNSEL-SOUTH
1444 Biscayne Boulevard
Suite 202
Miami, FL 33132-1422
(305) 377-7580

JEFFREY M. HAZEN
Florida Bar No. 053060
CCRC-Middle Attorney

JOHN P. ABATECOLA
Florida Bar No. 0112887
CCRC-Middle Attorney

ANDREW THOMAS
Florida Bar No. 0317942
Chief Assistant CCRC

CAPITAL COLLATERAL REGIONAL
COUNSEL-MIDDLE
3801 Corporex Park Drive
Suite 210
Tampa, FL 33619
(813) 740-3544

GAIL E. ANDERSON
Florida Bar No. 0841544
Special Assistant CCRC
CAPITAL COLLATERAL REGIONAL
COUNSEL-NORTH
1533-B South Monroe Street
Tallahassee, FL 32301
(850) 488-7200

COUNSEL FOR PETITIONERS/
APPELLANTS

Copies furnished to:

Kenneth Nunnelley
Katherine V. Blanco/Carol Dittmar
Assistant Attorney Generals
Department of Legal Affairs
Westwood Building, Seventh Floor
2002 North Lois Avenue
Tampa, FL 33607

Richard Martell
Carolyn Snurkowski
Department of Legal Affairs
The Capitol - PL01
Tallahassee, FL 32399-1050