

**ADDENDUM TO THE
APRIL 15, 2011 REPORT OF THE
TEXAS FORENSIC SCIENCE COMMISSION**

WILLINGHAM/WILLIS INVESTIGATION

OCTOBER 28, 2011

I. Introduction

On April 15, 2011, after extensive deliberations regarding the Willingham/Willis complaint filed by the Innocence Project in August 2007, the Texas Forensic Science Commission (“FSC” or “Commission”) issued its written report. (See www.fsc.state.tx.us). This addendum supplements the report and should be read in conjunction with it. The report describes the following:

- (1) Developments in fire science since the trials of Cameron Todd Willingham and Ernest Ray Willis, particularly with respect to incendiary indicators;
- (2) Key testimony regarding incendiary indicators given at the trials of Willingham and Willis; and
- (3) Seventeen recommendations for improving arson investigation and the criminal justice system’s treatment of arson cases in Texas.

The Commission declined to issue any finding regarding allegations of negligence or misconduct by the City of Corsicana or the Texas State Fire Marshal (“SFMO”) pending the issuance of a legal opinion on jurisdiction from Texas Attorney General Greg Abbott (“Opinion”). During the same period, the Commission awaited the outcome of legislative action designed to clarify the scope of its jurisdiction.

During the 82nd Legislative Session, Senator Juan C. Hinojosa (D-McAllen) proposed legislation (SB-1658) that would have set clear parameters for the Commission’s jurisdiction. Though the bill passed unanimously in the Senate, it was not considered in the House before adjournment was reached. The Commission expects that legislation similar to SB-1658 will be introduced during the 83rd Legislative Session.

Though the Commission did not receive any legislative clarity during the 82nd Session, the Commission’s Presiding Officer received the attached Attorney General Opinion on July 29, 2011. The Opinion addresses the scope of the Commission’s jurisdiction under its current enabling statute. (See TEX. CODE CRIM. PROC. art. 38.01)

II. July 29, 2011 Opinion of Texas Attorney General Greg Abbott

The Opinion contains two conclusions that restrict the Commission from proceeding with further investigation or reaching a finding of negligence and/or misconduct in this case. The first is that the FSC is prohibited from taking any action with respect to evidence offered or entered into evidence before September 1, 2005. The second is that the FSC's authority is limited to laboratories, facilities, or entities that were accredited by DPS at the time the forensic analysis took place.

On the first point, the forensic analysis in question (arson investigation) was completed and entered into evidence before 2005 and thus falls outside the FSC's jurisdiction. In addition, the analysis was performed by two entities—the SFMO and the City of Corsicana. Neither of these entities was an accredited laboratory, facility, or entity as defined in the Opinion.¹

The complainant has requested that the Commission issue a finding of negligence against the SFMO notwithstanding this language. The complainant argues that the Opinion does not prevent the Commission from issuing a finding regarding the SFMO's alleged negligence in failing to inform the criminal justice system of developments in fire science before Mr. Willingham's execution. Specifically, the complainant points to the following language in the Opinion:

“...the Act contains no time limitation on the FSC's general authority under section 4(a)(3) to ‘investigate in a timely manner any allegation of professional negligence or misconduct.’ Thus, although the FSC may investigate allegations arising from incidents that occurred prior to September 1, 2005, it is prohibited in the course of any such investigation from considering or evaluating specific items of evidence that were tested or offered into evidence prior to that date.”

¹ Though the SFMO now has a DPS-accredited laboratory as part of its operation (DPS first accredited the SFMO lab in 2003), none of the allegations of negligence or misconduct in the Willingham/Willis complaint involved forensic testing in the SFMO laboratory. Moreover, the SFMO laboratory was not yet accredited when the forensic analysis took place in either of these cases.

The complainant's interpretation would require the Commission to read the "general authority" sentence in isolation, without considering the remaining guidance in the Opinion and the specific language of Section 4(a)(3) of the Act. Returning to the plain language of the Commission's enabling statute under Section 4 entitled "Duties," the Commission shall: "investigate, in a timely manner, any allegation of professional negligence or misconduct *that would substantially affect the integrity of the results of a forensic analysis conducted by an accredited laboratory, facility, or entity.*" An allegation regarding the SFMO's failure to inform the criminal justice system of developments in fire science years after trial is not an allegation "that would substantially affect the integrity of the results of a forensic analysis conducted by an accredited laboratory, facility, or entity" as that language is described in the Opinion and set forth in the statute.

The Commission accepts the Attorney General's Opinion as guidance for its jurisdictional scope, and will consider complaints that come before it on a case-by-case basis. Because the Commission has agreed that it will abide by the Opinion, the Commission declines to issue any finding regarding alleged misconduct or negligence by the SFMO or the City of Corsicana. This is not an indicator that the Commission would have reached any particular finding absent the Opinion, but rather that the Commission accepts the jurisdictional limitations set forth by the Attorney General.

Notwithstanding these jurisdictional challenges, the Commission made important observations and recommendations regarding the state of arson investigation in Texas in its April report, including a recommendation that the SFMO develop a method for alerting the criminal justice system when advances in fire science impact the outcome in criminal cases. The question of when and how an agency responsible for forensic analysis should inform the criminal justice system of scientific changes that could impact the outcome of

criminal cases is the subject of ongoing discussion in many forensic fields. These issues require a willingness on the part of responsible forensic experts, lawyers, and legislators to develop a systematic and reasoned approach.

The Commission also reiterates the importance of continuous improvement in arson investigation, and is encouraged by the SFMO's commitment to working with appropriate stakeholders to implement the seventeen recommendations set forth in the report. The Commission encourages all stakeholders to work collaboratively to enhance the integrity and reliability of arson investigation in Texas. The Commission also encourages the Texas Legislature to take an active role in providing the SFMO and related agencies the tools they need to achieve these improvements, and to hold parties accountable for demonstrating continuous progress.

SUMMARY OF FORENSIC SCIENCE COMMISSION RECOMMENDATIONS IN WILLINGHAM/WILLIS REPORT

The Commission recognizes that progress on each recommendation is dependent upon the ability and willingness of the SFMO and other key stakeholders to devote resources to implementation. The SFMO has requested the Commission's assistance in facilitating implementation, and the Commission will provide such assistance over the coming months. The Commission's Presiding Officer will update Commissioners periodically regarding the status of various recommendations. To ensure that each recommendation accurately reflects the input of the SFMO, applicable recommendations are provided below with SFMO feedback included.

FSC RECOMMENDATIONS

The SFMO considers the FSC's 17 recommendations to be appropriate and fair. The SFMO is committed to ensuring the best possible forensics are used in fire investigations in Texas. The SFMO will consult with credible organizations, seek expert advice and coordinate with the FSC to implement the recommendations.

RECOMMENDATION 1: ADOPTION OF NATIONAL STANDARDS

Summary: The FSC recommends that the State Fire Marshal's Office (SFMO) work with the Texas Commission on Fire Protection (TCFP) and other relevant agencies to develop its own strategic plan setting forth best practices in fire investigation. The plan should meet the recommended national standards that exist at the time it is completed.

Examples of guiding documents for current standards include but are not limited to: the current edition of NFPA 921, NFPA 1033, the National Institute of Justice's June 2000 report entitled *Fire and Arson Scene Evidence: A Guide for Public Safety Personnel*; and the National Center for Forensic Science, and Technical/Scientific Working Group's January 2008 report entitled *Fire and Explosion Investigations and Forensic Analyses: Near-and Long-Term Needs Assessment for State and Local Law Enforcement*.

SFMO: The SFMO will collaborate with the Texas Commission on Fire Protection (TCFP) and the Texas Engineering Extension Service (TEEX) at Texas A&M University to develop a multi-agency strategic plan to address concerns raised by the FSC. The SFMO will update the FSC as that process moves forward.

RECOMMENDATION 2: RETROACTIVE REVIEW

If new scientific knowledge develops over time that would materially change the opinions or results in a criminal investigation, the individual or agency has a responsibility to inform the parties involved or develop procedures for doing so.

Accredited disciplines of forensic science have standards that promote the re-examination of cases when science has evolved to create a material difference in the original analysis or result. Those standards include: (1) duty to correct; (2) duty to inform; (3) duty to be transparent; and (4) implementation of corrective action. The SFMO should develop similar standards.

SFMO: The SFMO agrees to perform an internal review of the forensics of its cases where: (1) a cause and origin fire investigation performed by SFMO resulted in a determination that the fire was incendiary; (2) the case went to trial; and (3) a conviction of arson or murder by arson was made. The Innocence Project of Texas (IPOT) has agreed to help identify cases and categorize those cases (*i.e.*, distinguish between cases involving the SFMO and cases involving other fire investigation agencies), based in part on work it has done already. IPOT will document and distribute its proposed methodology for identifying cases in the coming weeks. The approach to studying the cases identified by IPOT (*e.g.*, who should be on the subject matter expert committee, etc.) will then be further refined through discussion. The review will take many months to complete. All parties agree to work collaboratively and to comply with any applicable laws and regulations.

RECOMMENDATION 3: ENHANCED CERTIFICATION

The primary mechanism for training and educating fire investigators in Texas is individual certification. The certification process is administered by the TCFP. Texas has two separate certification titles for fire protection personnel: fire investigator and arson

investigator. The main difference between the two is that an arson investigator must be certified both as a fire investigator and as a peace officer. The Texas Commission on Law Enforcement Officer Standards and Education (“TCLEOSE”) administers peace officer certification.

In 2009, the NFPA released enhanced guidelines for education and training of fire investigators nationwide, and clarified that the guidelines should apply to *all fire investigators*. Under NFPA 1033’s guidelines, fire investigators should have, at a minimum, a high school degree plus successful coursework in the following topics at a “post-secondary education” level:

- fire science;
- fire chemistry;
- thermodynamics;
- thermometry;
- fire dynamics;
- explosion dynamics;
- computer fire modeling;
- fire investigation;
- fire analysis;
- fire investigation methodology;
- fire investigation technology;
- hazardous materials; and
- failure analysis and analytical tools. (NFPA 1033 at 1.3.8.)

Fire investigators must also maintain their knowledge in these subject areas and “remain current” with investigation methodology, fire protection technology, and code requirements by attending workshops and seminars and/or through professional publications and journals. (*Id.* at 1.3.7.)

The Commission recommends that the TCFP phase in a timeline for requiring all investigators to comply with NFPA 1033. The first phase should require that any fire investigator who testifies in court come into compliance with NFPA 1033 standards as soon as practicable. Subsequent phases should require compliance based on the levels of responsibility assumed by investigators. The timeline should be aggressive but flexible to encourage a smooth transition toward compliance. Continuing education requirements promulgated by the TCFP should incorporate NFPA 1033’s guidelines.

SFMO: This recommendation pertains to the authority of TCFP. As of June 2, 2011, TCFP has adopted NFPA 1033. Thus, all certified fire investigators in Texas will be required to come into compliance with these standards.

RECOMMENDATION 4: COLLABORATIVE TRAINING ON INCENDIARY INDICATORS

The FSC is encouraged by recent efforts among fire scientists, investigators and officials at the SFMO to develop a training course that includes hands-on analysis of incendiary indicators through live burn exercises. The SFMO and TCFP should work with local fire departments to encourage maximum participation, possibly by offering sessions in multiple regional locations. A special effort should be made to ensure participation by smaller rural communities. The SFMO and TCFP should also take into consideration any other pertinent curriculum recommended by the NIJ and other national agencies and working groups. The FSC recommends that the following subjects be reviewed at a minimum:

- fire science basics;
- fuels;
- ignition;
- fire growth;
- incendiary indicators;
- myths and misconceptions;
- elimination of accidental causes;
- proper documentation and photos;
- eyewitness interviews; and
- diagrams and use of the Ignition Matrix.

Training should be limited to active fire investigators currently serving in Texas to encourage an open and honest exchange (similar to “post-mortem” sessions conducted by medical doctors and scientists). It should include opportunities for investigators to participate in live burn exercises. All attendees should be given current copies of NFPA 921 and *Kirk’s Fire Investigation* at a minimum. Participants should receive continuing education credit for their attendance. Finally, an examination should be given at the end of the course to determine whether attendees absorbed key principles.

SFMO: The SFMO is planning forensic fire investigation training from Dr. DeHaan for all SFMO Fire Investigators. The State Fire Marshal will also explore additional options with Dr. DeHaan regarding how to make the training available to as many fire investigators as possible. This may be done through TEEEX, the TCFP, or through the highly attended annual arson investigation seminar in Austin.

RECOMMENDATION 5: TOOLS FOR ANALYZING IGNITION SOURCES

New tools exist to help investigators identify and analyze various sources of ignition during a fire investigation. For example, the Ignition Matrix was introduced in the latest edition of *Kirk’s Fire Investigation* and NFPA 921 as a straightforward method for ensuring compliance with the various requirements of NFPA 921.² The matrix prompts investigators to ask a series of questions regarding potential ignition sources. Investigators

² Information regarding the Ignition Matrix, developed by Lou Bilancia, was provided to the FSC by Dr. John DeHaan in February 2011.

then label the information they have gathered based on pre-established color and notation categories. The approach constitutes a “best practice” method for evaluating sources of data at the scene of a fire and documenting the facts relied upon when reaching conclusions about various ignition possibilities. When carried out with a comprehensive map of the suspected area of origin, the Ignition Matrix provides investigators with a concrete way to conduct a methodical review of data and facts before forming an opinion, in compliance with NFPA 921. The SFMO should consider methods for integrating the Ignition Matrix into its training and investigative work.

SFMO: The SFMO will explore options for use of this tool by SFMO Investigators, and talk with Dr. DeHaan about how best to integrate the matrix into fire investigations.

RECOMMENDATION 6: PERIODIC CURRICULUM REVIEW

The FSC recommends that stakeholders (including representatives from the TCFP, SFMO, fire investigators and scientists) form a regular working group to review training curricula and ensure that it meets the ongoing needs of fire investigators in Texas. The group could also identify ways to take advantage of Internet-based training such as CFITrainer and virtual reality fire investigation programs. Because CFITrainer provides a variety of online options for achieving compliance with NFPA 1033, use of the website may be particularly helpful in rolling out the enhanced certification requirements discussed above.

SFMO: The SFMO supports having a working group to review curriculum, which would encourage information sharing among the agencies. The SFMO will discuss how to approach this with the TCFP Director.

RECOMMENDATION 7: INVOLVEMENT OF SFMO IN LOCAL INVESTIGATIONS

Local fire departments call the SFMO for assistance when they believe a case is significant enough to warrant such assistance. If the SFMO has personnel available, it sends them to assist. Based on discussions with SFMO leadership, it appears that the SFMO is always available to assist when called upon; the agency rarely denies assistance. Some Commissioners have questioned whether there should be clear legal requirements governing cases in which the SFMO appears for assistance. The Commission strongly recommends that the SFMO have an Advanced or Master Arson Investigator participate in all fire investigations involving the loss of life.

SFMO: The SFMO does not have the authority to require local fire departments to call the SFMO for assistance with fire investigations. Though they do have rulemaking authority, it only governs the SFMO’s activities, not the activities of municipalities. The SFMO can only prioritize among cases where they are called to assist. Any change to this process would require legislative intervention as well as additional resources. The FSC will add this to the list of items for consideration by the legislative development committee.

RECOMMENDATION 8: ESTABLISHMENT OF PEER REVIEW GROUP/MULTIDISCIPLINARY TEAM

The Commission strongly recommends that the SFMO establish a peer review team (perhaps to include someone from the SFMO, a local investigator, a fire scientist, and a medical examiner) to review pending and completed arson cases on a quarterly basis (similar to the cold case DNA task force group, or CPS' review of child abuse cases, multidisciplinary team (MDT) models, etc.) This would be a good-faith effort to assure the public that there is a review mechanism in place, especially for structure arson cases involving fatalities. It would also be a way to encourage ongoing professional development across the field. The most efficient approach may be to establish regional MDTs.

SFMO: The FSC and the SFMO recognize that this is a good idea, but are concerned about the implications of creating a multidisciplinary team without confidentiality protection for pending cases (the examples cited in other areas such as child death cases, etc. include confidentiality protection). The FSC will also add this to the list of items for consideration by the legislative development committee.

RECOMMENDATION 9: STANDARDS FOR TESTIMONY IN ARSON CASES

The FSC recommends that the SFMO and local fire investigators begin implementing the standards set forth in NFPA 1033 and related guidelines to improve the overall quality of testimony offered in arson investigations.

SFMO: NFPA 1033 is the new standard in Texas, and thus all testifying investigators will have to comply with the requirements set forth in the standard.

RECOMMENDATION 10: ENHANCED ADMISSIBILITY HEARINGS IN ARSON CASES

The FSC recommends that admissibility hearings (also referred to as *Daubert/Kelly* hearings) be conducted in all arson cases, due to the inherently complex nature of fire science and the continuously evolving nature of fire investigation standards. The FSC encourages both prosecutors and defense counsel to aggressively pursue admissibility hearings in arson cases. In addition, judges should affirmatively exercise their discretion to hold such hearings in all arson cases as a method of ensuring that fire science testimony is reliable and relevant.

RECOMMENDATION 11: EVALUATING COURTROOM TESTIMONY

The Commission recommends that the SFMO and local fire departments develop policies and procedures for the evaluation of courtroom testimony.

The FSC also recommends that the SFMO expand its mock trial program to include more participants. One alternative would be to allow for online participation, or to work with the TCFP to make the program a component of continuing education for arson investigators.

SFMO: SFMO investigators rarely testify in court, but the SFMO recognizes that testimony must be based on modern scientific principles. The SFMO will work to ensure that its analysis and investigators' testimony is based on the most current scientific practices available. Courtroom training will be provided using mock trial and other techniques.

RECOMMENDATION 12: MINIMUM REPORT STANDARDS

SFMO leadership reviews each fire investigation report submitted by its investigators and instructs investigators to revise their reports if there is any indication of an incomplete analysis. This process is designed to help ensure that the scientific method is followed by SFMO investigators. However, it is limited to fire reports submitted by investigators employed by the SFMO; there is no standardized reporting method that applies to fire investigators statewide.

The Commission recommends that the SFMO develop and release minimum standards for fire investigation reporting statewide. As the NAS Report notes, "there is a critical need in most fields of forensic science to raise the standards for reporting and testifying about the results of investigations." (NAS Report at 185.) Minimum standards should verify that key elements have been reviewed, documented, collected, photographed (to the extent applicable) and analyzed. They should also have a method for red-flagging scenarios in which additional consultation might be necessary (such as when an electrical engineer should be called in to help with arc mapping, etc.). They should track key elements of NFPA 921 and evolve as new editions are released. Tools such as the Ignition Matrix and voice-recognition software should be integrated into the report-writing process. The SFMO has obtained a grant for the use of voice-recognition software; the FSC encourages the agency to seek additional ways to expand opportunities for using the software.

SFMO: While the SFMO cannot require local jurisdictions to adopt any particular reporting standard, it can post a model fire investigation report as a resource and encourage its adoption. The SFMO has been reviewing other reporting systems and will continue that process to include ATF's BATS (Bomb and Arson Tracking System), FireFiles Software and other nationally recognized systems. The SFMO has requested a BATS demonstration to review the changes and improvements made to the system since the last demonstration.

RECOMMENDATION 13: PRESERVATION OF DOCUMENTATION

The Commission notes that review of documentation in the Willingham case presented difficulties because the documents, photographs of fire debris, and related records were no longer available. Local fire departments and the SFMO should preserve originals and forward only copies of documentation.

SFMO: The SFMO keeps original documents (primarily the investigator's reports and schematics) and photographs. With the introduction of digital photography and related technology, this is much easier to accomplish today than it was in the early 1990's.

RECOMMENDATION 14: DISSEMINATION OF INFORMATION REGARDING SCIENTIFIC ADVANCEMENTS

The SFMO should identify additional ways to help the fire investigation community in Texas stay current with national developments in fire science. For example, there should be a consistent and effective method for disseminating new information regarding the results of fire science experiments and controlled burn studies. Formats could include quarterly electronic newsletters, regular online forums, periodic webcast updates, NIST and NCJRS library resources, journal abstracting services, etc. The SFMO may also consider retaining a fire scientist to consult on an as-needed basis. Such a relationship would encourage the free flow of information between the two communities and provide a continuous source of outside expertise for particularly challenging interpretive questions.

The FSC recommends that the SFMO perform an internal audit to evaluate fire investigation training, certification, and policies and procedures to ensure compliance with all relevant national standards. The FSC recommends that the SFMO develop a plan for implementing new standards as they evolve as well as ongoing quality assurance measures.

SFMO: The SFMO will look for ways to disseminate advances in fire science electronically to fire investigators throughout the state, whether through an in-house newsletter or by forwarding existing available resources. SFMO will consult with staff, Dr. DeHaan, and others regarding possible options for achieving this.

RECOMMENDATION 15: CODE OF CONDUCT/ETHICS

State agencies and professional organizations often have a Code of Conduct or Ethics to guide expectations. The FSC understands that the SFMO does not currently have such a Code; the FSC recommends that the SFMO establish a Code of Conduct/Ethics for fire investigators in Texas.

SFMO: The SFMO has in place a Code of Professional Ethics in the Standard Operating Procedures manual. SFMO Peace Officer Investigators also subscribe to the Law Enforcement Code of Ethics and Code of Conduct which is also in the Standard Operating Guidelines.

RECOMMENDATION 16: TRAINING FOR LAWYERS/JUDGES

The FSC recommends that the Texas Legislature and/or any other body overseeing continuing education in Texas consider requiring judges and lawyers practicing in criminal courts to have some form of ongoing forensic science training as a component of their Continuing Legal Education obligations.

RECOMMENDATION 17: FUNDING

The Commission urges that the Texas Legislature and municipalities take steps to ensure sufficient funding is available to provide training to fire and arson investigators so that may meet the standards set out in NFPA 921 and NFPA 1033, and stay current with national advances in fire science.

The FSC further recommends that the Texas Department of Insurance make it a priority to ensure that the SFMO receives sufficient funding so that its fire and arson investigators are properly trained to meet the standards set out in NFPA 921 and NFPA 1033, and so they are able to stay current with advances in fire science.

FSC staff visited the National Fire Research Laboratory of the Bureau of Alcohol, Tobacco, Firearms & Explosives in July 2011. Staff met with lab leadership and investigators who conduct extensive research and fire reconstruction activities in the laboratory. ATF investigators and program managers expressed their willingness to assist state and local investigators in Texas with training and research activities. The Commission encourages the SFMO and related agencies to work with federal training managers, especially to the extent they can supplement state resources.

Finally, the FSC recommends that the SFMO aggressively seek out alternative sources of funding for education of its investigators, including but not limited to federal and private grants.

SFMO: The SFMO has applied for and received federal grant money (from Coverdell and other programs) and will continue to research ways to obtain grant funding. Additional support from the Legislature would also be helpful. The agency does not have an oversight board currently and believes they would be assisted by having some oversight from a legislative committee, such as a requirement for submission of an annual report. The agency raised this point with the Legislature during the last session. The FSC will add this to the list of items for consideration by the legislative development committee.