



POLICY ISSUE

September 24, 1991

(NEGATIVE CONSENT)

SECY-91-301

For: The Commissioners

From: James M. Taylor
Executive Director for Operations

Subject: PROPOSED ENFORCEMENT ACTION AGAINST SEQUOYAH FUELS CORPORATION (EA: 91-067)

Purpose: Consultation with the Commission is warranted in this case because the proposed enforcement action involves two Licensee vice presidents who acted with at least careless disregard for regulatory requirements and because the staff's conclusions differ in part from those of the Office of Investigations (OI). In addition, the action will result in extending or requiring a shutdown for one of two uranium hexafluoride production facilities in the U. S. by several months.

Background: The Sequoyah Fuels Corporation (SFC) is licensed by NRC to operate uranium hexafluoride (UF₆) and depleted uranium tetrafluoride (DUF₄) production facilities in Gore, Oklahoma. In August 1990, SFC reported to NRC its discovery of uranium-contaminated soil and water during an on-site excavation in the vicinity of the facility's Solvent Extraction Building. An Augmented Inspection Team (AIT) was dispatched to conduct an onsite review of the event from August 27-29, 1990. As a result of information developed during the AIT, an investigation was initiated on September 4, 1990, to determine, among other things, whether SFC intentionally violated reporting requirements, and if the Manager, Environmental, deliberately withheld information regarding soil and water sampling and analysis results from NRC inspectors.

On September 14, 1990, the Licensee informed the NRC of additional, potentially significant contamination under the main process building (MPB) that had been known to the Licensee since the 1970's. Consequently, an Order

Contact: J. Lieberman, OE, 20741

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PROPOSED ENFORCEMENT ACTION
NOT FOR PUBLIC RELEASE WITHOUT APPROVAL OF THE DIRECTOR, OE

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Modifying License (EA 91-067) was issued on September 19, 1990, to determine the amount and extent of licensed material under the Main Process Building and whether any licensed material had migrated beyond the restricted area.

While NRC review of the two contamination events had not yet concluded, by November 5, 1990, it had progressed to the point where the staff was concerned with certain aspects of the Licensee's safety and environmental programs. Consequently, a Demand for Information (EA 90-158) was issued to require the Licensee to (1) describe an independent interim oversight program it would be willing to put in place while management deficiencies and weaknesses in the permanent organization were being remedied, and (2) provide a plan for an independent, written appraisal of site and corporate organizations. On January 14, 1991, the staff approved the general outline for the management appraisal. The staff is still reviewing several remaining issues in the Demand for Information and the Licensee's response to the management assessment.

Discussion:

As a result of the OI investigation (see OI Report 4-90-012) and several inspections, the staff is proposing the enclosed enforcement action. The enforcement action involves an Order Modifying License (effective immediately) to (1) remove Ms. Carolyn L. Couch, Manager, Environmental, from supervisory or managerial responsibilities over NRC-regulated activities for a period of time, and require supervision of her involvement in NRC-regulated activities by an individual not named in the Demand for Information, and require the licensee to provide information why the licensee should not be modified to prohibit Ms. Couch from serving in any capacity involving the performance of any NRC-regulated activities, and (2) prohibit restart of the plant from its upcoming annual shutdown (scheduled for September 23 through October 6, 1991) until SFC develops and obtains NRC approval of a plan and schedule that would review the adequacy of the Health & Safety, and Environmental Programs.

In addition to the Order, a Demand for Information requires the Licensee to demonstrate why the license should not be modified to (1) prohibit Messrs. Mestepey, Lacey, and Simeroth from serving in any capacity involving the performance or supervision of any NRC-regulated activities, and (2) to require 30 days prior notice to the NRC of reinvolvement of Mr. Nichols by SFC in any capacity in NRC-regulated activities. Mr. Mestepey is Senior Vice President of SFC, Mr. Lacey is Vice President for Regulatory Affairs, and Mr. Simeroth is the Health Physics Supervisor. Mr. Nichols is not currently employed by SFC, but was formerly Manager, Health, Safety, and Environment.

The specific bases for the enforcement action are described in the enclosed order and are summarized as follows. First, Ms. Couch intentionally provided false testimony to OI investigators concerning her knowledge of results of laboratory analyses of samples taken from the SX excavation, and willfully withheld information material to the NRC investigation. Secondly, NRC inspections from the August 1990 AIT to the present have identified numerous procedural inadequacies and failures of SFC personnel to comply with SFC procedural and health and safety requirements, deficiencies in training and instruction of personnel for work in restricted areas, and serious weaknesses in contamination control practices.

The Demand for Information sets out in detail for each individual, his or her responsibilities, knowledge of relevant facts, and his or her failure to act on that knowledge to effectively discharge his or her responsibilities and authorities to comply with NRC requirements. Each individual knew of the possibility of uranium contamination at the SX excavation and had seen visual indications of that contamination early in the project. While the staff cannot conclude that the individuals addressed in the Demand deliberately failed to comply with NRC requirements, the staff believes that the individuals acted with at least careless disregard.

OI concluded that Ms. Couch, Manager, Environmental, and Mr. Simeroth, Health Physics Supervisor, deliberately failed to answer the NRC Inspector's question concerning the excavation water. OI also concluded that Ms. Couch, and Messrs. Simeroth and Lacey (who was at the time the Manager, Regulatory Compliance and Quality Assurance), made a deliberate decision not to address the question unless it was again asked at a later date. The Office of the General Counsel advises that it would be difficult to demonstrate that these actions constituted a violation of 10 CFR 40.9, Completeness and Accuracy of Information, because the omitted information did not cause an affirmative statement to be materially incomplete or inaccurate. Although not being treated as a violation of Section 40.9, the staff considered the lack of candor of these individuals to be significant in this instance because an answer would have involved telling the inspector of the uranium contamination.

The investigation also concluded that Messrs. Mestepey, Lacey, Nichols, and Simeroth and Ms. Couch, with full knowledge that elevated levels of uranium contamination were discovered in the excavation site, deliberately failed to instruct the contract employees working in the excavation site of the health protection problems associated with exposure to radioactive materials and the precautions or procedures to minimize exposure, as required by NRC regulations. Although the staff does not believe that the evidence supports the OI conclusion that the individuals deliberately violated NRC requirements, the staff believes that Messrs. Mestepey, Lacey, Nichols, and Simeroth acted with at least careless disregard. While each was aware of the potential contamination problem associated with excavation in the restricted area, each failed to assure that the contractor personnel were informed. The staff concludes that those failures are more than mere negligence because, as is demonstrated in the attached Order, the evidence demonstrates a total lack of attention to known responsibilities.

As to Ms. Couch, the staff cannot conclude that she acted with careless disregard concerning the instruction of the contract workers, due to the nature of her job. Although she shared the same general knowledge of the contamination as the other managers, and had acted on August 7, 1990, to stop work in the excavation while an unidentified liquid was being analyzed, her area of responsibility historically had been limited to environmental work "outside the fence" and did not involve health physics or training. Additionally, after learning of the contamination, she discussed the discovery with the Senior Vice President on August 7, 1990. However, it is OI's view that at that point, with the knowledge she possessed, it was her duty to come forward to the NRC.

The Commission should be aware that elements of the staff hold varying views on the sufficiency of the evidence indicating that Ms. Couch intentionally provided false testimony to OI or that she deliberately withheld information. Notwithstanding these views, the staff believes that it is appropriate to remove Ms. Couch from supervisory or managerial responsibilities because there is a lack of reasonable assurance that the licensee, with Ms. Couch involved in oversight of activities, will comply with NRC requirements.

Although the NRC would normally require an individual involved in deliberate violations to be removed from all NRC-regulated activities, in selected cases employees have been allowed to continue in licensed activities. In those cases, licensees have been required to provide additional supervision to provide the requisite assurance for public health and safety rather than ordering removal from all licensed activities. Because Ms. Couch has demonstrated a high level of technical competence over an extended period of time with the office of NMSS, and in light of the lack of a clear consensus by the staff regarding the sufficiency of the evidence, the proposed order allows for her continued involvement in licensed activities but with new licensee oversight.

Recommendation:

- (1) The staff requests Commission approval of this proposed action no later than October 3, 1991 so that the enclosed order can be issued, if possible, before restart from the current 2 week outage. To support this, the staff will schedule a Commissioner Assistant's briefing no later than Monday September 30, 1991.
- (2) If the Commission cannot support the action of (1), above, the Staff will modify the order to require plant shutdown in an orderly manner upon issuance of the order.

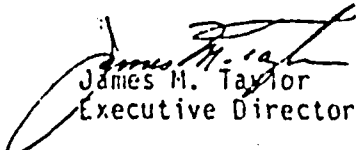
Coordination:

The Office of General Counsel has no legal objection to this proposal. The Office of Investigations concludes that the facts used herein that are taken from the investigation report are correct, and that the summarization of the investigation conclusions are accurate.

The case has been referred to the U.S. Department of Justice and DOJ has no objection to issuance of this action.

Note:

This paper involves a pending enforcement action and should not be publicly disclosed.


James M. Taylor

Executive Director for Operations

Enclosures: Order Modifying License
and Demand for Information

SECY NOTE: In the absence of instructions to the contrary, SECY will notify the staff on Wednesday, October 2, 1991, that the Commission, by negative consent, assents to the action proposed in this paper.

DISTRIBUTION:

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

Docket No. 40-8027
License No. SUB-1010
EA 91-067

Sequoyah Fuels Corporation
ATTN: Reau Graves, Jr.
President
Post Office Box 610
Gore, Oklahoma 74435

Gentlemen:

SUBJECT: ORDER MODIFYING LICENSE (EFFECTIVE IMMEDIATELY) AND DEMAND FOR
INFORMATION

The enclosed Order Modifying License (Effective Immediately) and Demand for Information is being issued to the Sequoyah Fuels Corporation (SFC) to address a number of significant safety violations and regulatory problems identified at the facility by NRC inspections and investigations that have been conducted since the August 1990 solvent extraction tank excavation. This Order and Demand is based on the NRC's conclusions that certain SFC managers failed to follow NRC requirements and the conditions of the NRC license, that a certain SFC employee made false statements and withheld information from the NRC, and that your Health & Safety and Environmental Programs are in need of substantial improvement to assure the health and safety of the general public, SFC employees, contractor personnel who work at the site, and protection of the environment.

This Order modifies SFC's license to remove Carolyn L. Couch from supervisory or managerial responsibilities over NRC-regulated activities for a period of one year from the date of the enclosed Order, effective immediately. Additionally, if Ms. Couch remains involved in NRC-regulated activities, she is not to be supervised by any of the individuals named in the Demand for Information. You are also required to perform an in-depth review of the administrative control and implementing procedures in your Health & Safety and Environmental Programs by qualified personnel from outside SFC approved by the NRC. A plan that provides for an appropriate scope of the review and prioritization of items to be covered, along with an implementing schedule, must be submitted to, and approved by, the NRC prior to your restart from the September 1991 plant shutdown.

While the NRC cannot conclude that other SFC managers provided false information, there are serious questions as to whether the Senior Vice President, the Vice President of Regulatory Affairs and the Health Physics Supervisor, who have not assured that past licensed or safety responsibilities were carried out, can in the future, adequately perform the organizational responsibilities and authorities, especially those outlined in SFC's License. Therefore, you are required to respond to the enclosed Demand for Information in accordance with the instructions provided therein. This information is necessary to determine whether to modify, suspend or revoke your NRC License, and whether to renew your license.

Sequoyah Fuels Corporation

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Questions concerning this Order and Demand for Information should be addressed to James Lieberman, Director, Office of Enforcement, who can be reached at (301) 492-0741.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice", a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

Sincerely,

Hugh L. Thompson, Jr.
Deputy Executive Director for
Nuclear Materials Safety, Safeguards
and Operations Support

Enclosure: As Stated

UNITED STATES
NUCLEAR REGULATORY COMMISSION

In the Matter of

SEQUOYAH FUELS CORPORATION
Gore, Oklahoma

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Docket No. 40-8027
License No. SUB-1010
EA 91-067

ORDER MODIFYING LICENSE
(EFFECTIVE IMMEDIATELY)
AND
DEMAND FOR INFORMATION

I

Sequoyah Fuels Corporation (SFC or Licensee) is the holder of Source Material License No. SUB-1010 issued by the Nuclear Regulatory Commission (NRC or Commission) pursuant to 10 CFR Part 40. The license authorizes possession and use of source material in the production of uranium hexafluoride (UF₆) and depleted uranium tetrafluoride (DUF₄) in accordance with the terms and conditions of the license. The license was due to expire on September 30, 1990, but currently remains in effect based on a timely renewal application submitted by the Licensee.

II

The NRC requires its licensees to adhere to the safety standards that are contained in its regulations and the conditions specified in the facility license. The Licensee described its management organization and the responsibilities assigned to key personnel in SFC's license renewal application dated August 23, 1985, as supplemented. The NRC expects those Licensee managers holding the key positions described in the application to ensure compliance with the regulations that are within their area of licensed

responsibility so as to protect the health and safety of the general public, the Licensee's workers, any contractors that work at the facility, and the environment. Furthermore, the HRC must be able to rely upon the integrity of those Licensee managers in their conduct of licensed activities and their provision of complete and accurate information to HRC.

At the time of the solvent extraction tank excavation, SFC described its management organization and the responsibilities and authorities assigned to key personnel in its license as follows:

- A. The President, Sequoyah Fuels Corporation (Mr. Beau Graves), shall have overall responsibility for the safe operation of the Sequoyah Facility. Additional responsibility has been assigned to the Senior Vice President, the Vice President, Business Development, the Controller, the Manager, Regulatory Compliance and Quality Assurance, and the Manager, Health, Safety, and Environment for various functions as described in this license. These individuals report directly to the President, Sequoyah Fuels Corporation.
- B. The Senior Vice President (Mr. James H. Mestepey) shall be responsible for all nuclear manufacturing activities, which includes operations, maintenance, engineering, and the process laboratory. He specifically oversees the operations, modifications, and process and equipment criteria. He shall be responsible for safe and efficient plant operations. He reviews all operating procedures, plant modifications and processes,

equipment criteria and other general and administrative matters.

Mr. Mestepey reports to the President, SFC. (The organization chart shows that Mr. Mestepey is also responsible for the Training Department.)

- C. The Manager, Regulatory Compliance and Quality Assurance (Mr. Lee R. Lacey), who reports to the President, SFC, is responsible for the development and implementation of a Facility Quality Assurance Plan to assure that all operations and safety-related activities are performed in accordance with facility procedures. He is also responsible for maintaining the company's NRC licenses and preparing correspondence and reports submitted to the NRC. He advises management on nuclear regulatory issues and provides regulatory compliance oversight in environmental compliance and other regulatory areas. (In September 1990, Mr. Lacey was promoted to Vice President, Regulatory Affairs, and now has additional responsibilities which include oversight of the health and safety programs, the environmental compliance [protection] programs, and the environmental laboratory.)
- D. The Manager, Health, Safety, and Environment (formerly Mr. Michael M. Nichols, who resigned on April 19, 1991), who reports to the President, SFC, shall be responsible for developing and implementing programs, procedures and guidance in the functional areas of health physics, industrial hygiene, industrial safety, physical security, and environmental analyses. He shall be responsible for the effluent monitoring program, the respiratory protection program, the bioassay program, the health and safety program, the environmental laboratory, and the program for surveillance of all plant activities related to these areas.

- E. The Manager, Environmental (Ms. Carolyn L. Couch), who reports to the Manager, Health, Safety and Environment, shall be responsible for developing and implementing programs and procedures to comply with all environmental monitoring requirements required by federal and state agencies. This includes the maintenance of environmental records required by SFC and by regulatory agencies.

Another key individual involved with the solvent extraction tank excavation, but whose position is not described in the license, is the Health Physics Supervisor/Assistant Radiation Safety Officer (Mr. Kenneth G. Simeroth). He reports to the Manager, Health, Safety, and Environment. During the August 1990 SX excavation activities his prime responsibility was oversight of the SX excavation for Health & Safety (H&S) Department. All of the H&S technicians reported to him at the time. After September 1990 he was assigned special programs in the H&S department, and was no longer responsible for oversight of H&S technicians.

Since August 1990, several events have occurred that demonstrate a failure on the part of key SFC managers to ensure that NRC requirements were met in their area of responsibility and indicate that a certain SFC manager failed to provide complete and accurate information to the NRC during an inspection and subsequent investigation. The first event involved the identification and reporting to the NRC on August 22, 1990, of uranium contaminated soil and water during excavation work near the solvent extraction building from approximately August 1 through August 29, 1990. An Augmented Inspection Team (AIT) conducted an onsite review of the event from August 27-29, 1990. The AIT found that concerns involving uranium contaminated water in the excavation pit were expressed by the Manager, Environmental to the Senior Vice President as early

as August 7, 1990. The AIT also found that responsible personnel did not become aware of the actual elevated sample results until August 17, 1990. Another five days elapsed before this information was communicated to the NRC. Test results for several water samples taken prior to August 8, 1990, that showed elevated levels of uranium, had apparently been lost during this time period. The Licensee was unable to determine the reason for the loss of the sample results. The AIT concluded that the Licensee's staff did not demonstrate the necessary sensitivity to the potential for uranium contamination, or understand the urgency and potential significance of such a problem. A formal investigation was initiated by the NRC on September 4, 1990, to determine whether willful violations of NRC regulations occurred.

As a result of the AIT's findings, in a letter dated August 30, 1990, the Licensee committed to: (1) assure the integrity of the solvent extraction building floor, (2) characterize the quantity and location of licensed material under the solvent extraction building, (3) identify potential migration pathways, and (4) control contaminated soil and water from the excavation. These commitments were reviewed by an AIT follow-up inspection from September 10-13, 1990. That inspection determined that the Licensee's actions taken to satisfy those commitments were appropriate. Therefore, on September 13, 1990, the NRC verbally concurred on the restart of the solvent extraction process, and documented this concurrence in a letter dated September 14, 1990. The AIT followup inspection also found that no evaluations were performed to assess the potential for worker exposure prior to workers entering the excavation, and that the radiological surveys performed were inadequate to meet 10 CFR 20.201(b) requirements. These findings, however, had no significant impact on the safe operation of the facility and were evaluated for appropriate enforcement action when the AIT followup inspection report was issued.

The second event concerned the Licensee's identification and reporting of uranium contaminated water beneath the main process building (MPB) on September 14, 1990, a few hours after restart activities began. Information pertaining to the contamination under the MPB had been known to the Licensee since the 1970's. This information was of concern to the NRC because it indicated that there could be extensive contamination under the MPB. Due to the location of the MPB and lack of monitoring wells around the MPB, licensed material could have migrated into the unrestricted area and contaminated ground-water. Because the NRC did not believe the Licensee exhibited a sense of urgency for this potentially larger problem, an Order Modifying License was issued on September 19, 1990. The September 19, 1990 Order required SFC to characterize the site, take actions to prevent further releases of contaminated water, and conduct appropriate monitoring of ground water. Additional inspection coverage was instituted to verify the activities performed by the Licensee in response to the Order.

By early November 1990, those followup NRC inspections progressed to the point where the NRC was concerned that certain aspects of the SFC Safety and Environmental Programs were not being performed in full accord with NRC requirements. Consequently, a Demand for Information was issued on November 5, 1990, to have the Licensee describe (1) an oversight program it was willing to put into place while management deficiencies and weaknesses in the permanent organization were being remedied, and (2) plans for an independent written appraisal of site and corporate programs and activities, that would develop recommendations for improvements in management controls and oversight to provide assurance that personnel would comply with regulatory requirements and site procedures. The Licensee responded to the Demand in a letter dated November 20, 1990.

SFC contracted with a consulting company to perform the independent assessment of SFC's management, in accordance with the Demand, and the assessment was transmitted to the NRC via a letter dated May 15, 1991. SFC responded to the management assessment on July 15, 1991. In its response SFC stated that "the assessment gave the facility a positive bill of health in many respects, provided numerous valuable insights into our operation, and contained many useful recommendations for continual improvements." In many of the responses to the recommendations, SFC did not provide an analysis of the recommendations, but merely quoted the assessment. Additionally, neither the independent assessment nor SFC's response included a discussion and analysis of the causes of the deficiencies referenced in the Demand. SFC has agreed to implement most of the recommendations contained in the assessment over the next 18 months. In the meantime, the NRC is concerned that there continues to be observed deficiencies and weaknesses in the licensee's safety program.

NRC investigation activities concluded on June 28, 1991. The investigation concluded that certain Licensee managers failed to provide complete and accurate information to the NRC, willfully failed to comply with NRC regulations, and made false statements during NRC inspection and investigation activities.

III

As a result of a series of events at the Sequoyah facility, a number of violations and weaknesses were identified that indicate a significant management breakdown has occurred. Beginning with the August 1990 SX excavation, it became evident that significant communication weaknesses existed within the SFC organization, key licensee managers did not fully understand licensed responsibilities, and a complete failure occurred on the part of the Health & Safety

organization to assure that adequate radiological controls were implemented. NRC investigation activities related to the SX event identified a number of willful violations of NRC requirements. Increased NRC inspection efforts have identified indications that the Licensee continues to experience problems with control over activities involving licensed materials.

A. SX Excavation Activities

To comply with EPA regulations for underground storage tanks, the Licensee planned to excavate two underground tanks adjacent to the solvent extraction (SX) building during the August 1990 annual plant shutdown, and encase them in a concrete vault. One of the tanks contained licensed material (uranium bearing solvent) and was identified by the Licensee as being under NRC jurisdiction. Messers. Mestepey and Lacey and Ms. Couch stated that prior to the August 1990 annual plant shutdown, the possibility of encountering uranium contamination around the tank excavation was discussed in staff and other Operational Departmental meetings. A number of plant supervisors and managers interviewed stated that the reason that they believed that contamination could be present was due to past process fluid seepage through the SX building floor prior to its 1983/1984 repair. On August 1, 1990, the Licensee began excavating soil around the two underground tanks.

The Hazardous Work Permit (HWP) covering the excavation required the assignment of Health & Safety (H&S) technicians to provide extensive hexane monitoring due to the explosive potential of the vapors trapped in the ground. However, the HWP did not specify any contamination control measures for the workers or require that radiation surveys be made; and no provisions existed to modify the HWP to account for new or changing radiological conditions at the worksite.

During the week of August 1-6, 1990, Licensee personnel observed surface rocks coated with uranium. Mr. Nichols stated that he was notified of this condition by Ms. Couch and had operations personnel gather the material. A followup interview with Mr. Lacey, then the Manager of Regulatory Compliance & Quality Assurance, indicated that Ms. Couch had also notified him of the yellow rock discovery between August 1-4, 1990, but he failed to follow facility operating procedure HS-010, paragraph 4.7, "Visual Detection of Uranium", and forward a contamination report to the Health & Safety office.

Ms. Couch, Manager, Environmental, testified that her sole responsibility for the SX excavation project was the collection of two soil samples in conjunction with the EPA underground storage tank enclosure regulations. The samples were only required to be analyzed for total petroleum hydrocarbon (TPH) content. Those soil samples were obtained on August 7, 1990, and submitted to a laboratory for TPH analysis. Ms. Couch also obtained additional soil samples, however; no request for a uranium analysis was made for any of the soil samples until August 22-23, 1990.

Liquid samples were taken from the excavation site on August 1, 4, 6 and 7, 1990. The August 1 sample, obtained by an engineer, indicated 0.02 grams uranium/liter (g-U/l) and was known to the Licensee on August 2, 1990. Ms. Couch had liquid samples taken on August 4, 6 and 7, 1990. She testified that Mr. Nichols had not directed her to obtain the samples; but that she had done so out of curiosity. An additional liquid sample was taken on August 7 by Mr. Barrett, the SFC Safety Engineer. Mr. Knoke, the Facility Laboratory Manager, told NRC investigators that on August 7, he reviewed the August 6 sample results which indicated about 3 g-U/l, and brought it to the attention of several individuals, including Mr. Lacey,

who was responsible for regulatory compliance. In a subsequent interview, Mr. Lacey stated that he did not recall Mr. Knoke discussing this item with him. In addition, Mr. Nichols, who was responsible for health and safety, claims that he was not aware of the results of the August 4-7 liquid sampling until about August 22, 1990. Throughout the project, no liquid samples were required to be taken by the Health & Safety group to evaluate the potential hazards to workers from licensed material (uranium).

It was the Licensee's practice to have the Operations Department obtain all liquid samples and H&S obtain all air samples for laboratory analyses. However, no plant procedure existed that required the Operations Department to forward the results of the liquid sample analysis to the H&S Department. After H&S had sampled the air (alpha monitoring) around the excavation site on August 3 and 4, 1990, no further radiological evaluations of the potential worker exposure occurred until August 22, 1990, even though workers continued to move dirt or work in the excavation throughout that time.

The SX excavation job was the critical project scheduled for completion during the 1990 annual plant shutdown. As a consequence, key management and supervisory personnel, including Mr. Mestepey, often visited the site. The H&S supervisor, Mr. Simeroth, stated that he was frequently present at the excavation, and that his immediate supervisor, Mr. Nichols, the Manager of Health, Safety, and Environment, was also at the excavation on an almost daily frequency. Mr. Lacey stated that he occasionally visited the work site and saw water in the excavation during the week of August 6, 1990.

Messrs. Mestepey and Simeroth and Ms. Couch accompanied two NRC inspectors on a general facility tour that included the excavation site on August 6,

1990. During this tour an NRC Inspector received no reply when he casually asked what was "in the water" in the excavation around the underground tanks. In subsequent testimony, Mr. Mestepey stated that he had not heard the question. However, both Ms. Couch and Mr. Simeroth stated that they had heard the question. Ms. Couch first stated in a September 4, 1990 interview that she did not respond to the Inspector's question because she did not feel it was her responsibility since Mr. Mestepey was present, and she felt that she would be chastised for speaking up. However, she later testified on March 1, 1991, that Mr. Mestepey was not in the immediate group when the question was asked, and that she gave a flippant reply to the inspector because in her view it was not a serious question and if the inspector really wanted an answer, it would be addressed formally. She also testified that she did not answer the question because Mr. Mestepey was at the entrance meeting and was well aware of the contamination in the pit and the question was not addressed specifically to her. Mr. Simeroth stated that he did not respond because he felt it was Ms. Couch's responsibility. He also stated that after the tour he discussed the question with Ms. Couch, they both agreed it had not been answered, and Ms. Couch said she was waiting to see if the inspector would pursue it. Further NRC investigation revealed that Ms. Couch met later with Mr. Lacey to discuss the inspector's question. However, neither contacted the inspector to provide a response during the course of the inspection.

Mr. Mestepey stated in an interview that the presence of yellow water as a "rule of thumb" indicates 1 gram per liter (g/l) of uranium contamination. Other Licensee personnel, including Messrs. Lacey and Nichols and Ms. Couch, acknowledged that yellow water at the site was considered contaminated. Although Mr. Nichols testified that he did not see any

"yellow water" during his almost daily site visits until August 22, 1990. All of the contractor and other Licensee personnel interviewed (including the H&S supervisor, Mr. Simeroth, who claims to have discussed the matter with Mr. Nichols during the first week) indicated they observed the presence of yellow water by approximately August 4, 1990. Mr. Lacey testified that he had been at the excavation site several times during the first week and had seen standing water in the pit.

Both SFC and contractor employees involved in this project worked in close proximity to this contaminated liquid, coming into contact with it on numerous occasions. After the August 1, 1990 sample, taken during the first day of the excavation, the next analysis results (for the August 4 sample, at 2.06 g/l) were available in the laboratory on August 7. On that same day, one day after the HRC inspector's question went unanswered, Ms. Couch observed a black liquid (potential hydrocarbons that are not releasable) in the pit and ordered the workers out. She also ordered that the liquid be drummed. Work in the pit was resumed later that day.

In addition to the expected ground water seepage, significant amounts of water entered the excavation due to the heavy rainfall of August 11 and 12, 1990. On August 13, 1990, at the direction of Mr. Mestepey, about 3,000 gallons of accumulated water were pumped from the excavation to the north ditch. This water was pumped onto the ground and allowed to follow the natural terrain, contaminating the ground along the way. The north ditch feeds the facility's combination stream, which is the normal monitored plant effluent path. The next day, SFC resumed pumping water into barrels.

The results of the August 6 and 7 samples requested by Ms. Couch ranged from 0.02 to 8.2 g-U/l. The result of the August 7 sample taken by

Mr. Barrett, available that same day, was not expressed as g-U/l, but as a percentage (1% uranium). However, no action was taken to evaluate the potential radiological hazards until the results were sent to the UFB Area Manager (Acting Manager, Operations) on August 17, 1990. Even then, the results were not forwarded to the H&S group until about August 22, 1990. Ms. Couch told various inspectors in the Augmented Inspection Team (AIT) during the week of August 27, 1990, that she had seen an August 4, 1990 laboratory analysis showing 2.06 g/l uranium and had informed Mr. Mestepey of the contamination in the pit. During interviews with HRC investigators on September 3 and 4, 1990, Ms. Couch stated that on August 7, 1990, she had taken two soil samples from around the tanks, and showed them to Messrs. Nichols, Lacey, and Mestepey because the samples appeared contaminated (yellow). In discussions with Mr. Mestepey on that day, she indicated that the material on the excavation wall made it obvious that the water was contaminated. However, she made no mention to the HRC inspectors of reviewing laboratory analysis of the liquid samples taken on August 6 and 7, 1990.

During a followup interview on September 5, 1990, and in sworn testimony on September 12, 1990, Ms. Couch stated that she had no specific knowledge of the uranium contamination levels in the SX excavation water during her August 7 discussion with Mr. Mestepey. She further stated that she was not aware of the sample concentrations until August 22, 1990. During a subsequent sworn interview on March 1, 1991, Ms. Couch stated she might have seen the August 4, 1990, laboratory report.

However, during a subsequent OI telephone interview on March 19, 1991, (with SFC's attorney present) Ms. Couch then admitted that on August 7 or 8, 1990, she had seen an August 7, 1990, laboratory report (for the

sample taken by Mr. Barrett) which indicated the presence of uranium contamination in SX excavation liquids. Because the uranium level was expressed in percentages, Ms. Couch claimed this laboratory report was meaningless to her, and later admitted she never asked anyone what this percentage would equate to in g-U/l. Ms. Couch said that even though she received this laboratory report shortly after the NRC inspector asked his August 6, 1990, question, she did not inform the NRC inspectors of this result because she thought the inspector's question was informal. She also stated that she had a copy of the August 7 laboratory analysis taken by Mr. Barrett with her during the March 1 and 19, 1991, OI interviews, but forgot to bring it to the investigator's attention.

NRC investigative inquiries revealed that several contractor employees working in the SX excavation site did not receive the instructions required by 10 CFR Part 19. The training that five contractor employees who worked in the excavation received consisted of only viewing a short visitor orientation video that appeared to be designed for visitors who were to tour the facility or possibly work in areas that did not involve exposure to hazardous materials. It did not provide adequate instructions about potential hazards and potential health effects from exposure to licensed materials in the excavation pit. The NRC interviewed about 13 of the contractor employees. Most of the contract workers interviewed stated that they did not know that uranium was present in the SX excavation where they were working. One individual indicated that he asked a H&S technician what was in the liquid and was told that it contained a very small amount of uranium that was not harmful. These contract workers informed the NRC, as verified by other SFC employees, that liquids from the excavation were routinely in contact with their skin, that these liquids burned their skin for a short period of

time (burning sensation would not be due to uranium), and that they complained to various SFC individuals. One individual stated that he was sprayed in the face with contaminated liquid while pumping liquid out of the pit on August 4, 1990. They further stated that they obtained some boots and rubber gloves only through their own initiative. The excavation site was roped off for industrial safety purposes, but not posted as a radiation or contaminated area.

The air samples taken on August 3 and 4, 1990, were not adequate to detect worker exposure to airborne contamination from August 6-22, 1990 because of changing conditions in the pit. Further, the Licensee failed to evaluate the need to obtain bioassay samples from contract workers (see NRC Inspection Reports 40-8027/90-05 and 90-06, dated November 26, 1990 and February 21, 1991). Although bioassay samples were obtained for some SFC personnel, NRC interviews of SFC employees indicated that none of them had experienced working conditions similar to the contractors who had been assigned to work in the SX excavation (uranium-contaminated liquids potentially in contact with the skin for several hours per day, for two to four weeks). SFC failed to evaluate the need for bioassays and as a consequence the contractors did not submit urine samples between August 1 and 22, 1990, and many did not submit any urine samples.

NRC investigation and inspections found that SFC Health & Safety employees failed to conduct adequate radioactive contamination surveys of articles leaving the facility. The surveys conducted were deficient in that the licensee monitored only for alpha activity, and not for beta/gamma. Although SFC maintained that no equipment went off-site that exceeded permissible release limits, on November 15, 1990, the NRC found articles

that had been contaminated to approximately ten times the SFC license limit in the cab of a truck parked at the residence of one of the contractor employees. The following day the Licensee surveyed the truck and other items at the employee's residence. However, the Licensee's survey instrument was not sensitive enough to identify all contamination above the release limits of the license (see NRC Inspection Report 40-8027/90-06).

SFC asserted that the contaminated equipment discovered under the seat of the truck was in a location not ordinarily surveyed and that the responsibility for the equipment going off-site rested with the contractor, not with the Licensee. The NRC, however, holds its licensees, not contractors, responsible for ensuring that adequate release surveys are performed. The failure of SFC's managers to understand this fundamental principle resulted in contaminated articles being removed from the site by its contractor employees.

Testimony from Messrs. Mestepey, Lacey, and Nichols established that Licensee management was aware of the elevated uranium concentrations on August 17, 1990. However, the Licensee did not inform NRC Region IV by telephone of its discovery until August 22, 1990. This report was not made within 24 hours, as required by 10 CFR 20.403(b). In its November 20, 1990 response to NRC's November 5, 1990 Demand for Information, the Licensee asserted that "A release of radioactive material did not occur; the water was in an excavation, well within the restricted area boundary." Notwithstanding the Licensee's rationale, the NRC has determined that the discovery of the elevated uranium concentrations in the SX excavation constituted a reportable event because it was apparent even then that it might have

caused or threatened to cause property damage in excess of \$2,000). Specifically, the cost of decontamination activities (characterization and remediation) to address contamination related to the SX excavation clearly exceeded \$2,000. In its May 1, 1990, response to similar reporting violation that occurred in March 1990, SFC had stated ". . . now has a much better understanding of NRC notification requirements and recognizes that conservative standards are to be applied in determining whether an event should be reported." Although Mr. Mestepey was present at the enforcement conference where the violation was discussed, he failed to assure that the SX excavation event was promptly reported. (see NRC Inspection Report 40-8027/90-03).

Additionally, none of SFC's managers took actions to stop work in the excavation once the contamination levels were known, and work was allowed to progress to the extent of placing the concrete floor in the vault over contaminated soil even after the issue was reported to the NRC (see NRC Inspection Report 40-8027/90-04 dated October 11, 1990).

In response to NRC concerns during the AIT inspection of August 27-29, 1990 (see NRC Inspection Report 40-8027/90-04), SFC drilled five boreholes with an air auger to determine if contamination had spread through the ground away from the SX building. However, it was not until February 1991, that an NRC inspector identified that SFC had existing "SX sandwells" in utility trench sand backfill zones that essentially already provided this information. SFC personnel had sampled these "sandwells" since the late 1970s and the data clearly indicate that uranium contamination had migrated away from the SX building.

Information about the existence of the pre-1990 "sandwells" was sent to Mr. Lacey on August 30, 1990, by memorandum from the Manager, Process Laboratory in response to an internal SFC investigation of the SX excavation issues. Mr. Lacey in turn sent the information to Ms. Couch. However, neither Mr. Lacey nor Ms. Couch informed NRC inspectors of the existence of this data. In fact, NRC identified this information in February 1991 only through its inspection efforts. At no time did SFC personnel advise the NRC of this relevant data that clearly demonstrated the migration of licensed materials away from the SX building over an extended period of time. Furthermore, information about the SX sandwells was not in SFC's decommissioning file (required by 10 CFR 40.36(f)).

B. Notification of Contamination Under the Main Process Building (MPB)

After the AIT was initiated, SFC agreed to perform several tasks prior to the restart of the facility (reference the letter from Beau Graves, President of SFC to Robert Martin, Regional Administrator, NRC Region IV, dated August 30, 1990). An AIT Followup Inspection occurred on September 10-13, 1990, and NRC verbally concurred on restart of the Sequoyah facility on September 13, 1990. A few hours after restart on September 14, 1990, SFC informed NRC about a "well" in the denitration area that penetrated the floor of the MPB to the ground beneath it. Since the mid-1970s, SFC operators had routinely pumped uranium-contaminated liquids from under the MPB using this well (see NRC Inspection Reports 40-8927/90-05, 90-06, and 90-07 dated November 20, 1990, February 21 and March 1, 1991, respectively).

NRC investigation determined that Mr. Lacey was informed about the "well" (later called the "subfloor process monitor") by a former SFC manager on or about August 31, 1990. Mr. Lacey subsequently discussed this information with Mr. Mestepey sometime during the week of September 3, 1990. The presence of liquids under the MPB indicated the potential for floor degradation and significant contamination, which were similar to the NRC's concerns regarding the SX event. However, Mr. Lacey neither requested that a sample of the liquid be taken and analyzed, nor that further investigation of the issue be undertaken until September 14, 1990, just prior to informing NRC after the restart of the facility. After the notification, SFC managers did not promptly evaluate the contamination problem.

Since the Licensee could not assure the NRC that all migration pathways to the unrestricted area were known or that the ground water had not been contaminated, the NRC issued an Order Modifying License (Order) on September 19, 1990 (see the letter dated September 20, 1990, from James M. Taylor of NRC to Reau Graves of SFC and attached Order dated September 19, 1990), to require a plan that would quantify and locate the contamination under the MPB.

C. NRC Demand For Information and Related Activities

In response to concerns resulting from the identification of contamination in, around, and under the SX building and the MPB, SFC implemented an Interim Compliance Oversight Team. This action was taken as a result of NRC concerns involving the SX excavation issues. NRC issued a Demand for Information (Demand) (letter from Hugh L. Thompson, Jr., of NRC to Reau Graves, Jr., of SFC dated November 5, 1990) which requested, among

other things, that SFC describe an oversight program it was willing to put into place while management deficiencies and weaknesses in the permanent organization were remedied. The Demand also requested SFC to submit a plan for an independent appraisal of site and corporate organizations and activities that would develop recommendations for improvements in management controls and oversight.

SFC responded to the Demand on November 20, 1990 and agreed to set up a Sequoyah Oversight Team (SOT) to provide NRC additional assurance that NRC's regulations would be satisfied during operations of the Sequoyah facility. Secondly, SFC agreed to provide an impartial comprehensive management assessment and proposed the details for its implementation.

In that response, SFC made several statements that were subsequently found by the NRC to be inaccurate or misleading. This is significant because it demonstrates that as of November 20, 1990, SFC still did not understand the extent of its problems. Examples of such statements and related problems are as follows:

"Significant steps were taken to prevent any kind of problem that could have resulted from elevated levels of uranium..."

A. "Discolored water was tested immediately on August 4... ordered the water to be drummed;"

This part of the Licensee's assertion is misleading because the water sample was not obtained as part of any pre-planned requirement by the Health & Safety Department, but rather due to Ms. Couch's curiosity.

Additionally, 3,000 gallons that accumulated in the pit were not drummed, but pumped directly on the ground on August 13, 1990.

- B. "Health & Safety technicians took air samples on August 3 and 4, which did not show any unusual level of contamination;"

This assertion is misleading because a significant amount of work occurred from August 4-22, 1990. Additionally, air sampling is not an adequate method for identifying and quantifying liquid contamination.

- C. "Many soil samples were taken;"

This statement is misleading in that the Licensee did not require any soil samples to be taken for uranium analysis. Ms. Couch was only required to take two soil samples for TPH analysis to meet EPA requirements. Other soil samples that she obtained (not required) were not analyzed for uranium until August 23, 1990.

- D. "Although special urinalysis of the contract workers began on August 22, routine urine samples were taken from Sequoyah personnel working in the excavation prior to August 22;"

This assertion is misleading because most of the contractors were finished with their work at SFC by August 22, 1990, and had been discharged. Additionally, the working conditions differed significantly between SFC and contractor personnel, as the contractors actually came into contact with the contaminated liquid.

NRC inspection efforts have identified numerous weaknesses and violations of NRC requirements since the August 1990 SX contamination event in SFC's Health & Safety and Environmental Protection Programs. In total, NRC concludes that these weaknesses and deficiencies indicate a significant failure of the management control program at the Sequoyah facility.

A. Overflow of the Solvent Rework Centrifuge

On September 15 and 16, 1990, an NRC inspector observed operations personnel draining process liquids on the floor of the SX building (see NRC Inspection Report 40-8027/90-05). These activities were contrary to statements that SFC managers, including Messrs. Graves, Lacey and Kestepcy, had made to NRC that the floor of the SX building would no longer be used as part of the process operation. Under a previous owner, this type of operational activity apparently contributed to the degradation of the SX floor in the early 1980s.

An NRC inspection conducted in February 1991 (see NRC Inspection Report 40-8027/91-03 dated April 29, 1991) described an event where operations personnel were unaware of a SFC internal requirement to clean the solvent rework centrifuge every 24 hours. The operations personnel apparently cleaned the centrifuge "when needed." Because the requirement to clean the solvent rework centrifuge every 24 hours was not adhered to, process solutions overflowed onto the floor. This event was noteworthy given SFC's commitments to improve contamination controls.

B. Depleted Uranium Tetrafluoride (DUF4) Facility Contamination Event

On June 5, 1991, NRC inspectors observed workers who were visibly contaminated and were not adhering to procedural requirements or appropriate health physics practices, while changing filters in the Depleted Uranium Tetrafluoride (DUF4) facility (See NRC Inspection Report 40-8027/91-10 dated July 22, 1991). The most significant problems identified were:

- (1) Responsible Licensee personnel failed to adequately review the planned work activity to develop a Hazardous Work Permit appropriate for the control of the task.
- (2) The workers' lapel air sampler failed to function properly.
- (3) Appropriate protective clothing was not worn, resulting in head, neck, abdomen, thigh, hand, and other skin contamination.
- (4) The plastic "tent" erected for the job was not posted as either an airborne or contamination area.
- (5) No step-off pad was used to prevent the spread of contamination (as a result, the area outside the tent was also visibly contaminated where the workers had walked with contaminated boots).
- (6) One of the workers exited the tent, removed his respiratory protection and then re-entered the tent without it.

- (7) No provisions were made to change out of contaminated clothing at the job site (to change or shower, the workers would have had to walk over 100 yards to the Main Process Building).
- (8) No health physics coverage was provided for a maintenance activity involving a system that had not been previously opened.

These problems were particularly significant because they demonstrated that the corrective actions undertaken by the Licensee to strengthen its Health and Safety Program since the SX event were not yet effective.

C. Radiation Safety Program

The following items, some of which have been discussed above, demonstrate a significant failure in SFC's radiation safety program.

- ° An NRC inspector observed on September 16, 1990, operators draining process solutions onto the floor in the SX building to the point that liquids overflowed the sump and dispersed on the floor (see NRC Inspection Report 40-8027/90-05). Interviews with Licensee personnel indicated that the floors were made, and used, as a method of secondary containment of process fluids. This occurred despite a previous Licensee commitment to minimize contaminated solutions on the floor.
- ° NRC investigation identified that the Licensee had no mechanism to identify visitors who were minors in order to take the extra precautions required by NRC regulations to limit their exposures. In fact, NRC investigation revealed that one minor worked in the SX excavation.
- ° On October 23, 1990, a shift supervisor, in the presence of an NRC inspector, wiped the bottom of a valve with his bare hand, while looking for leaks of potentially contaminated liquids in the SX building (see NRC Inspection Report 40-8027/90-06).
- ° On November 23, 1990, an NRC inspector observed an operator not wearing respiratory protection (as required by procedures) when manually unclogging a conveyor that transported yellowcake (see NRC Inspection Report 40-8027/90-06).
- ° On December 1, 1990, an NRC inspector found that an SFC shift supervisor turned off a malfunctioning frisker, but did not inform the responsible H&S personnel. Later two female employees did not

frisk themselves prior to exiting the change room, because the frisker was turned off (see NRC Inspection Report 40-8027/90-06).

- ° NRC inspectors found an ash receiver area high radiation area door left unlocked and unattended in January 1991. This problem has reoccurred on three separate occasions within a 3-month period (see NRC Inspection Reports 40-8027/90-06, 91-01 and 91-02).
- ° On February 15, 1991, NRC inspectors observed poor contamination control practices during an ash receiver change-out, when the activity resulted in visible contamination in a hallway. No attempts were made to limit access to the area to control highly contaminated equipment. Ash receivers were changed out at least two to three times per day, and appropriate contamination controls had never been instituted (see NRC Inspection Report 40-8027/91-02). In May 1991, an inspector identified that SFC provided no training, guidance, or procedures that describe to workers how to undress from highly contaminated protective clothing in a manner so as to prevent skin contamination. As a result, the hands of two workers were contaminated during removal of highly contaminated protective clothing, after changing out ash receivers (see NRC Inspection Report 40-8027/91-09).
- ° During the week of May 6, 1991, an NRC inspector observed poor contamination controls when a highly contaminated cart outside the ash receiver area was not attended or controlled (see NRC Inspection Report 40-8027/91-08).
- ° On May 16, 1991, an NRC inspector observed a worker outdoors near the clarifiers (in the restricted area) dressed in protective clothing and a full face respirator sawing on PVC pipes on the ground. Although SFC's H&S staff took action to protect the worker from potential contamination by requiring the use of a respirator, they failed to adequately consider the potential for this activity to contaminate the ground adjacent to the work area (see NRC Inspection Report 40-8027/91-09).
- ° SFC's license requires only surveying for alpha contamination inside the restricted area; however, the Licensee identified a problem with beta contamination in the spring of 1990, and informed NRC that the problem would be evaluated (see NRC Inspection Report 40-8027/90-03). In November 1990, SFC again committed to evaluating the issue after NRC found contaminated materials at a private residence off-site (see NRC Inspection Report 40-8027/90-06). However, by May 1991 the Licensee still had no limits for beta contamination inside the restricted area, approximately one year after the problem was first identified (see NRC Inspection Report 40-8027/91-09).
- ° In June 1991, NRC inspectors identified that SFC has failed to survey laundered protective clothing, as required by procedure, for over a year. This failure is potentially significant in that workers continually overloaded the washers with protective clothing which provided the potential for inadequate decontamination. SFC identified that potential in March 1991, yet took no corrective actions to assure that laundered protective clothing was suitably free of contamination until NRC inspectors identified this same problem (see NRC Inspection Report 40-8027/91-10).

- ° Health and Safety technicians receive little to no formal health physics training, with most having only on-the-job experience. H&S technicians frequently depended on operations and maintenance personnel to establish the protection requirements described in a hazardous work permit (see NRC Inspection Reports 40-8027/90-04 and 91-10). This is contrary to the intent of a hazardous work permit which is to independently establish worker protection requirements appropriate to a specific hazardous task.

D. Environmental Protection Program

The NRC was aware that some ground contamination existed at the Sequoyah facility, as documented in NUREG 1157 "Environmental Assessment for Renewal of Special Nuclear Material License No. SUB-1010" dated August 1985, and NRC Inspection Report 40-8027/88-03. However, the NRC was unaware of the magnitude or the extent of the contamination. NRC investigation and inspections found that SFC had many indications of the magnitude of the ground contamination, and found that SFC had a number of weaknesses in its environmental protection program. The following six items demonstrate these failures and weaknesses:

- ° As discussed in Section III of this Order, NRC's investigation and inspections determined that SFC had monitored and analyzed the water from "sandwells" in the vicinity of the SX building. This data indicated contamination levels below the ground surface of the restricted area that averaged about 100 times above SFC's environmental action level for unrestricted areas and at least 20,000 times above background. However, prior to August 1990, the Licensee had taken no action to evaluate the extent of this contamination, develop remedial actions, or identify the areas in their decommissioning file. The sandwells provided the Licensee with data that indicated that SFC's environmental action level had been exceeded by as much as four orders of magnitude. Nevertheless, the Licensee discontinued the sampling of the sandwells in June 1989.
- ° The SX sandwells, which monitored utility trench sand backfill zones, provided SFC with data for several years which indicated that these zones were potential migration pathways for licensed material. As a result of the failure to investigate available data, SFC managers Couch, Lacey, Nichols, and Simeroth were unaware that licensed materials below the ground surface had migrated to the unrestricted area although still within the owner-controlled area.
- ° Operators often discharged process solutions to the north ditch, relying on dilution in the combination stream to assure release limits were satisfied. Intentional dilution, without any attempt to treat contaminated water, is a poor practice to limit releases to levels as low as reasonably achievable (see NRC Inspection Report 40-8027/90-67).

- ° As discussed in Section III of this Order, operators routinely recovered contaminated process liquids from under the main process building through the "subfloor process monitor" since the mid-1970s and Licensee personnel had never attempted to characterize the contamination under the building. Mr. Mestepey stated that he had been aware of this activity since about 1988, yet did not question the activity.
- ° The current characterization of the site has identified concentrations of uranium in the Sewage Lagoon as high as 16 g-U/l. These high values are apparently the result of discharges from the laundry. Uranium has been identified to a depth of about 40 ft in some monitoring wells inside the restricted area.
- ° Outside the restricted area fence but still inside the Licensee's property, uranium has been found in at least four locations. Uranium has also been found in the streambed of one formerly used outfall, outside SFC's property.

V

Based on the above, it appears that a number of significant deficiencies and weaknesses exist in the Licensee's Health & Safety and Environmental programs. These deficiencies include a failure on the part of Licensee management to fully understand and exercise their licensed responsibilities; poor communication within the SFC organization, particularly between the H&S and operations (production) staff; numerous inadequacies with regard to Licensee procedures and failures on the part of SFC employees to comply with SFC procedural requirements and health and safety practices; deficiencies in training and instruction of SFC personnel working in restricted areas; and serious weaknesses in the Licensee's contamination control practices, including failures to exercise basic controls to prevent contamination to the environment and to adequately evaluate contamination. The foregoing deficiencies in the Licensee's Health & Safety and Environmental Programs are significant and adversely impact health and safety.

In addition, the Licensee's Manager, Environmental, Carolyn L. Couch, intentionally provided false testimony to OI investigators. Specifically, notwithstanding

knowledge of the scope of the HRC investigation and the relevance of the liquid samples and analyses, and after informing the AIT that she first saw the August 4 analysis result of 2.06 g-U/l on August 7, 1990, and then discussed the contamination in the SX area with Mr. Mestepey, 1) on September 5, 1990, Ms. Couch stated to OI investigators that she was unaware of the exact yellow water sample concentrations of uranium until August 22, 1990, and 2) on September 12, 1990, she stated to OI investigators that she did not remember specifically

looking at any laboratory results concerning the excavation prior to approximately August 20, 1990, 3) on March 1, 1991, she stated to OI investigators that she might have seen prior to August 20 a laboratory analysis of a water sample which she had taken on August 4 which indicated approximately 2 g/l of uranium, 4) she admitted to OI investigators on March 19, 1991, that she had received and seen on August 7 or 8 a laboratory analysis of a water sample taken on August 7 which indicated a 1-percent concentration of uranium, and 5) she failed to provide OI with a copy of the August 7, 1990 analysis until March 19, 1991 although OI had previously requested all laboratory results regarding the SX excavation. These communications indicate a pattern whereby Ms. Couch either provided false information or willfully withheld material information. Furthermore, Ms. Couch did not respond to an HRC inspector on August 6 when questioned about the contents of the water in the SX excavation pit, and did not subsequently ensure that the inspector received a response to his question.

Finally, Ms. Couch was aware that in the past, sampling had been undertaken of water in pipes embedded in the ground known as "sandwells" to determine whether there was uranium contamination. In fact, she had discussed with Mr. Nichols in 1989 the sandwell data and whether the collected data was of value to the Health & Safety and Environment Departments. In addition, Ms. Couch had received a copy of a memorandum from Mr. Lacey, dated August 30, 1990, which

assigned selected SFC personnel certain tasks in connection with an investigation of the issues surrounding the excavation, and had received a copy of a memorandum from the Licensee's Manager, Facility Laboratory, also dated August 30, 1990, sent in response to Mr. Lacey's memorandum, which noted the existence of the data collected from the sandwell sampling. However, Ms. Couch failed to inform the NRC of the existence of the sandwells and sandwell data.

The Commission must be able to rely on its licensees to provide complete and accurate information. Licensees' willful violations of Commission requirements and Licensees' false statements to Commission officials cannot and will not be tolerated. The problem of false statements and the willful withholding of information by Ms. Couch undermine the NRC's reasonable assurance that the licensee with Ms. Couch involved in licensed activities will comply with NRC requirements, including the requirement that information provided be complete and accurate in all material respects.

Based on the foregoing, I lack the requisite reasonable assurance that the Licensee's current operations can be conducted under License No. SUB 1010 in compliance with the Commission's requirements and that the health and safety of the public, including the Licensee's employees, and the environment will be protected. Therefore, the public health, safety, and interest require that License No. SUB 1010 be modified to prohibit Ms. Carolyn L. Couch from supervisory or managerial involvement in NRC-regulated activities for a specified period of time and to require the rectification of deficiencies in the Health & Safety and Environmental Programs. Furthermore, pursuant to 10 CFR 2.202, I find the public health, safety and interest require that this Order be immediately effective.

Accordingly, pursuant to sections 161b, 161c, 161i, 161o, 182, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202, 10 CFR 2.204, and 10 CFR Parts 19, 20, and 40, IT IS HEREBY ORDERED, EFFECTIVE IMMEDIATELY, THAT LICENSE NO. SUB-1010 IS MODIFIED AS FOLLOWS:

- A.1. Carolyn L. Couch shall be removed from supervisory or managerial responsibilities over NRC-regulated activities at the SFC facility for a period of one year from the date of this Order. Additionally, if Ms. Couch remains involved in NRC-regulated activities, she is not to be directed or supervised by any of the individuals named in the Demand for Information (see section VIII). For two years after that initial period, SFC shall not reassign her to supervisory or managerial functions of NRC-regulated activities without providing 30-day prior notice to the NRC.
- A.2. Sequoyah Fuels shall provide the Director, Office of Enforcement, within 30 days of the date of this Order, in writing under oath or affirmation, information to demonstrate why License No. SUB-1010 should not be modified to prohibit Ms. Couch from serving in any capacity involving the performance of any NRC-regulated activities.
- B. SFC shall not operate the Sequoyah facility to produce Uranium Hexafluoride (UF₆) or Depleted Uranium Tetrafluoride (DUF₄) following its upcoming shutdown (currently scheduled to begin on September 23, 1991) [or, if this order is dated after startup, or shall promptly conduct an orderly shutdown and remain shutdown], until SFC submits and obtains NRC approval of the plan and schedule to review the adequacy of the Health & Safety and Environmental Programs, and the qualifications of the individuals from outside SFC performing

the review. The purpose of the review is to assure that the procedures provide clear instructions, are current, and are technically adequate, such that the intent of the procedure will be met. The schedule is to indicate which procedures will be reviewed, revised (as necessary) and implemented prior to startup. The dates by which the remaining procedure reviews, revisions, and implementation will be completed as well as a basis for their deferral until after start-up shall be provided. The schedule shall provide for appropriate personnel training in the procedures prior to their implementing the procedures reviewed and, as appropriate, revised. Following the review, the procedures are to be revised as necessary, and thereafter implemented. As a minimum, that review shall address the following areas:

1. Health & Safety

- Measures to keep internal and external exposures As Low As Reasonably Achievable (ALARA).
- Measures to ensure confinement of licensed materials. In cases where confinement systems failed, procedures shall require evaluation of the quantity of material released outside the confinement system, the root cause of the condition, and corrective actions to prevent recurrence.
- Use of appropriate protective clothing to prevent personnel contamination.
- Measures to ensure Hazardous Work Permits (HWP) provide clear guidance and instructions for personnel protection requirements

and define responsibilities, including the qualifications of the individuals permitted to issue, approve, and modify HWPs.

- Measures to ensure personnel dosimetry and internal dose assessment programs are supplied and implemented.
- Measures to ensure radiation, contamination, and airborne activity survey instruments and equipment are properly calibrated so accurate surveys can be performed, and that the survey instruments are appropriate for the type of radiation monitoring performed.
- Measures to ensure that a respiratory protection program is implemented so that respiratory protection equipment is used to minimize personnel exposure.
- Measures to ensure that all SFC and contractor personnel receive appropriate radiation protection and contamination control training.
- The responsibilities, qualifications and reporting requirements for H&S technicians and supervisors are clearly defined and these individuals receive appropriate indoctrination and training to implement their responsibilities.

2. Environmental Program

- Measures to maintain releases of licensed material to the restricted and unrestricted area As-Low-As-Reasonably-Achievable.

- Measures for sampling of ground water monitor wells, analysis of samples, and evaluating the adequacy of the ground water monitoring program.

The Regional Administrator, Region IV, may relax or rescind, in writing, any of the above conditions upon demonstration by the Licensee of good cause.

VII

The Licensee, Ms. Couch, or any other person adversely affected by this Order may submit an answer to this Order or request a hearing on this Order within 30 days of the date of this Order. The answer shall set forth the matters of fact and law on which the Licensee, Ms. Couch, or any other person adversely affected relies and the reasons as to why the Order should not have been issued. Any answer filed within 30 days of the date of this Order may include a request for a hearing. Any answer or request for a hearing shall be submitted to the Secretary, U.S. Nuclear Regulatory Commission, ATTN:, Chief, Docketing and Service Section, Washington, D.C. 20555. Copies shall also be sent to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, to the Assistant General Counsel for Hearings and Enforcement at the same address, to the Regional Administrator, NRC Region IV, 511 Ryan Plaza Drive, Suite 400, Arlington, TX 76011, and to the Licensee if the answer or hearing request is by a person other than the Licensee.

If a person other than the Licensee or Ms. Couch requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR 2.714(d).

If a hearing is requested by the Licensee, Ms. Couch, or any other person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be whether this Order shall be sustained.

In the absence of any request for a hearing, the provisions specified in this Order shall be final 20 days from the date of this Order without further order or proceedings. AN ANSWER OR A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF THIS ORDER.

VIII

In addition to issuance of this Order modifying License No. SUB-1010, the Commission requires further information from the Licensee in order to determine whether the Commission can have reasonable assurance that in the future the Licensee will conduct its activities in accordance with the Commission's requirements and the below-named managers will carry out the responsibilities and authorities assigned to their respective key position descriptions as outlined in the License.

Based on the above, it appears that key SFC management officials failed to carry out their responsibilities with regard to licensed activities and have not been candid with the NRC. Specifically:

- A. The Senior Vice President, James Mestepey, is responsible for all nuclear manufacturing activities, including operations, maintenance engineering, training, and the process laboratory, and reviews all operating procedures, plant modifications and processes, equipment criteria and other general and administrative matters.

During the SX excavation, Mr. Mestepey was the senior manager onsite, and was responsible for conducting the excavation and vault construction project. Mr. Mestepey acknowledged that he had a responsibility for the health and safety of the workers involved in completing the project.

Mr. Mestepey was apparently aware of the potential for and existence of contamination in the SX excavation from the onset of the excavation project. Mr. Mestepey had attended meetings prior to and during the excavation at which the potential for or existence of contamination had been discussed; had often been present at the excavation and observed yellow water in the pit; had informed NRC inspectors that SFC personnel, not contractors, would perform most of the work involving contaminated material; and was aware that such water was being barrelled and acknowledged that he had assumed that if the water was discolored and was being put into drums it was contaminated. Furthermore, on approximately August 8, 1990, Mr. Mestepey had seen a laboratory analysis of a sample taken on August 7, 1990, of the water in the excavation which showed uranium contamination of approximately 1 percent. As of August 20, Mr. Mestepey was aware of the existence of laboratory analyses of water samples taken from the excavation pit indicating levels of uranium of as high as 8 g/l.

Notwithstanding Mr. Mestepey's responsibility for the excavation project, his acknowledged responsibility to ensure the health and safety of the workers involved in the project, and his awareness that the water in the excavation pit contained some uranium contamination, Mr. Mestepey failed to take any action to notify his Health and Safety personnel of such contamination or to assure that workers were being adequately protected, and with at least careless disregard for regulatory requirements, failed

to instruct the workers as to the presence of uranium contamination in the excavation, in violation of 10 CFR 19.12.

Furthermore, on August 13, Mr. Mestepey made the decision to pump a large quantity of water to the north ditch, contaminating the ground. In addition, Mr. Mestepey failed to have SFC submit a report to the NRC within 24 hours of the discovery of elevated uranium levels in the excavation, in violation of 10 CFR 20.403(b)(4).

In addition, as fully described in Sections III and IV of this Order, the NRC investigation and inspections determined that there were serious deficiencies in the Licensee's radiation safety, environmental protection and operation safety programs. As Mr. Mestepey was responsible for such matters as operations, training, and review of operating procedures, it appears that Mr. Mestepey has failed to adequately exercise his responsibilities to ensure that these activities were in compliance with NRC and license requirements.

- B. The Vice President, Regulatory Affairs, Lee R. Lacey, is responsible for the oversight of the Licensee's health and safety programs, the environmental protection program, the environmental laboratory, the quality assurance program and the licensing program. He is responsible for the implementation of the Facility Quality Assurance Plan to assure that all operations and safety related activities are performed in accordance with facility procedures. Mr. Lacey advises SFC management on nuclear regulatory issues and provides regulatory compliance oversight in environmental monitoring and other regulatory areas. He is also responsible for the timely, accurate, and comprehensive flow of information from the Licensee to the NRC. Mr. Lacey had formerly held the position of Manager, Health, Safety and Environment.

Mr. Lacey was apparently aware of the potential for and existence of contamination in the SX excavation from the onset of the excavation project. Mr. Lacey had attended meetings prior to and during the excavation at which the potential for and existence of contamination had been discussed, and had often been present at the excavation and observed yellow water in the pit, but failed to complete a "visual detection for uranium" form (HS-016).

Mr. Lacey also was aware that one of the tanks to be excavated was under NRC jurisdiction. Mr. Lacey had also observed solidified uranium on the surface of the ground in the excavation area. By August 17, 1990, Mr. Lacey was aware of the existence of laboratory analyses indicating levels of uranium in the water of the excavation pit as high as 8 g/l.

Notwithstanding his responsibility for the environmental protection and QA programs and his awareness that the water in the excavation pit contained uranium contamination, Mr. Lacey, with at least careless disregard, violated the provisions of 10 CFR 19.12 by failing to ensure that contractor personnel working in the SX excavation were provided with information regarding the contamination in the excavation and with radiological protection. In addition, notwithstanding Mr. Lacey's responsibility for interfacing with the NRC and providing the NRC with timely, accurate and comprehensive information, Mr. Lacey took no action to inform the NRC of the contamination in the excavation, or any matters associated with the excavation, until August 22, 1990. Although Mr. Lacey was aware that the NRC inspector had inquired as to the contents of the water in the excavation pit, Mr. Lacey took no action to ensure that the inspector was provided with a response. Although Mr. Lacey was aware by August 17 of the laboratory analyses showing elevated levels of uranium in the water in the excavation,

he failed to have SFC submit a report to the NRC within 24 hours of the discovery of these elevated uranium levels, in violation of 10 CFR 20.403(b)(4).

In addition, Mr. Lacey was aware that SFC was conducting an internal investigation regarding the SX excavation. In fact, OI interviews established that the investigation was his responsibility. Mr. Lacey sent other management officials a memorandum dated August 30, 1990, requesting information in connection with this investigation and, in response to this request, received a memorandum from the Manager, Process Laboratory, also dated August 30, that there had been a series of samples taken from sandwells and that the data might be valuable in the investigation of the SX history. However, Mr. Lacey failed to investigate this data, which demonstrated the migration of licensed materials away from the SX building over an extended period of time, and failed to inform the NRC of the existence of the data.

Furthermore, on August 31, 1990, Mr. Lacey was informed about the existence of a subfloor process monitor in the SFC Process Building which had been used to pump uranium-contaminated liquids from under the building. However, Mr. Lacey failed to evaluate the contamination of the liquids under the floor, to further investigate the issue, or to inform the NRC of this matter until September 14, 1990, following restart of the facility.

Finally, Mr. Lacey was responsible for the Licensee's regulatory compliance and quality assurance programs, and had previously been responsible for the health and safety programs. As described in Sections III and IV of this Order, the NRC has identified serious deficiencies in the Licensee's radiation safety, environmental protection and operation safety program. Consequently, it appears that Mr. Lacey has failed to adequately exercise

his responsibilities to ensure that the Licensee has conducted these activities in compliance with NRC and license requirements.

- C. The Health Physics Supervisor/Assistant Radiation Safety Officer, Kenneth G. Simeroth, was responsible for oversight of the SX excavation for the H&S Department, and the physical safety of the workers in the excavation. At the time of the excavation, all of the H&S technicians reported to him.

Mr. Simeroth apparently was aware of the potential for and existence of contamination in the SX excavation pit. Mr. Simeroth was at the excavation frequently, and observed "off-colored" water in the pit, and indicated that he was aware that it was very likely that the water would have some uranium in it.

Mr. Simeroth had also been the principal individual who had sampled the SFC sandwells and, during the period that such sampling was conducted, was aware that there was uranium contamination in the water that leaked into the surrounding area of the SX building. Nevertheless, Mr. Simeroth, together with Mr. Nichols, made the decision to discontinue the sampling because the numbers meant nothing to him, as he had no knowledge of any limit levels pertaining to them.

Notwithstanding Mr. Simeroth's responsibility for the safety of the workers in the excavation and his awareness that the water in the excavation contained some uranium contamination, Mr. Simeroth, with at least careless disregard, failed to instruct the workers as to the presence of uranium contamination, or to assure that these workers were being adequately protected, in violation of 10 CFR 19.12. In addition, Mr. Simeroth stated that he had received no technical, formal training regarding the radiation

protection of employees and that he did not feel qualified to be Assistant Radiation Safety Officer because of his lack of training in radiological protection.

Furthermore, notwithstanding Mr. Simeroth's awareness that the water in the excavation contained some uranium contamination, Mr. Simeroth failed to respond when the NRC inspector inquired on August 6, 1990, as to contents of the water in the excavation. Although Mr. Simeroth and Ms. Couch later discussed the fact that they had not answered the inspector's question, Mr. Simeroth took no further action to ensure that the inspector received a response to his question.

- D. The former Manager, Health, Safety, and Environment, Michael M. Nichols, had been responsible for developing and implementing programs, procedures and guidance in the areas of health physics, industrial hygiene, industrial safety, and physical security. During the SX excavation activities, Mr. Nichols was responsible for the effluent monitoring program, the respiratory protection program, the bioassay program, the health and safety program, and the program for surveillance of all plant activities related to those areas.

Mr. Nichols apparently was aware of the potential for and existence of contamination in the SX excavation pit. Mr. Nichols was frequently at the excavation site, and numerous SFC employees, as well as NRC inspector, stated that, from early on in the excavation project, there was yellow water in the pit, indicating the presence of some level of uranium contamination, although Mr. Nichols denied seeing yellow water prior to approximately August 22, 1990, when the walls were poured. In any event, Mr. Nichols had observed solidified uranium on the surface of the ground in the excavation area, had been made

aware of low levels of contamination in the excavation from early on in the excavation project, and was told by Mr. Lacey on August 17 that there had been rumors of lab analyses of the water which indicated high readings of contamination.

Notwithstanding Mr. Nichols' responsibilities as described above, and notwithstanding his awareness of potential and actual contamination, Mr. Nichols, with at least careless disregard violated the provisions of 10 CFR 19.12 by failing to ensure that contractor personnel working in the SX excavation were provided with information regarding the contamination in the excavation and with radiological protection. In addition, Mr. Nichols, whose department informed the training department of contractors who were to receive training, admitted that he had seen contractor personnel around the SX excavation with only visitor badges, and did not question their being in the area without assurances that they had received the proper training.

Furthermore, Mr. Nichols failed to evaluate the contamination in the excavation, to adequately survey articles used at the excavation, and to obtain bioassays. Specifically, Mr. Nichols never instructed or ensured that his staff performed sampling of the water and soil in the excavation and report to SFC management any laboratory test results, even after he was aware of low levels of uranium-contaminated water in the excavation. Mr. Nichols' staff took only airborne samples on August 3 and 4, 1990, although workers continued to move dirt in the excavation throughout an extended time period, and Mr. Nichols admitted that, due to moisture in the soil, these airborne samples may not have been adequate. In addition, articles that had been contaminated in excess of the limits in the SFC license were released from the facility and found at the home of one of the contractor employees, and the NRC determined that the instrumentation

used by SFC personnel to survey these materials was not adequate to satisfy license requirements. Although he was informed on August 18, 1990 that the contractor's concrete forms were too contaminated to release, Mr. Nichols took no action to determine the root cause of these elevated contamination survey results.

Moreover, bioassay samples were not obtained for some contract workers until August 22, 1990, and were not obtained at all for the remaining contract workers. In addition, although Mr. Nichols was informed by Mr. Lacey on August 17, 1990, about "rumors" of elevated uranium contamination readings at the excavation area, Mr. Nichols never contacted the Facility Laboratory or took any further action to determine the validity of this information.

Finally, Mr. Nichols was aware that the sandwells had been sampled for uranium contamination, and had made the decision to discontinue the sampling because he did not understand the data that was being collected. He also had apparently received a copy of the memorandum from the Manager, Process Laboratory, dated August 30, 1990, that referenced the sandwell data. Although Mr. Nichols was extensively questioned during early September 1990 by OI regarding the potential source of the contaminated water in the excavation, he never advised the NRC of the existence of the sandwell data prior to late February or March, 1991.

Accordingly, pursuant to sections 161c, 161o, 182, and 186 of the Atomic Energy Act of 1954, as amended, and 10 CFR Part 40, in order for the Commission to determine whether your license should be further modified, suspended or revoked, or other enforcement action taken to ensure compliance with NRC regulatory requirements, the Licensee is required to submit to the Director, Office of

Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20549, within 30 days of the date of this Order and Demand for Information, the following information, in writing and under oath or affirmation:

Sequoyah Fuels Corporation shall provide information to demonstrate why License No. SUB-1010 should not be modified (1) to prohibit Pesters, Mestepny, Lacey, and Simeroth from serving in any capacity involving the performance or supervision of any NRC-regulated activities, and (2) to require 30 days prior notice to the NRC of reinvolvement of Mr. Nichols by SFC in any capacity in NRC-regulated activities.

Copies also shall be sent to the Assistant General Counsel for Hearings and Enforcement at the same address, and to the Regional Administrator, NRC Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011.

After reviewing your response, the NRC will determine whether further action is necessary to ensure compliance with regulatory requirements.

FOR THE NUCLEAR REGULATORY COMMISSION

Hugh L. Thompson, Jr.
Deputy Executive Director for
Nuclear Materials Safety, Safeguards,
and Operational Support

Dated at Rockville, Maryland
this day of 1991