



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

February 27, 1986

The Honorable Mike Synar, Chairman
Subcommittee on Environment,
Energy and Natural Resources
Committee on Government Operations
United States House of Representatives
Washington, D. C. 20515

Dear Mr. Chairman:

Enclosed are the responses to questions that you and Chairman Markey
submitted by letter dated January 21, 1986.

Some of the information requested is being developed from the
investigation and studies conducted after the accident. We will be
pleased to provide the Subcommittee and its staff with further information
after it becomes available.

Sincerely,

Nunzio J. Palladino
Nunzio J. Palladino

Enclosures:
As Stated

8603130117 860227
PDR COMMS NRCC
CORRESPONDENCE PDR

QUESTION 1.

Approval of Kerr-McGee's application to renew its license of this plant was delayed from October, 1982 to September, 1985. Explain in detail why the issuance of the license was delayed, including the items of disagreement between the NRC staff and Kerr-McGee. Please highlight any item of disagreement having implications for the recent accident. List each item of disagreement and how it was resolved in the license. Also, in response to this question, provide the Subcommittees with all correspondence between the NRC and Kerr-McGee with respect to this application, as well as all internal staff memoranda, letters, notes and all other related material pertinent to the license application.

ANSWER.

Although the original application for renewal was submitted in October 1982, during the initial review the staff concluded that more detailed and current information was needed to act on the renewal application. Accordingly, a completely revised application was submitted in November 1983 in response to the staff's request for additional information. This revised application was further supported with additional information in 1984, and the "conditions" section of the license application was resubmitted in September 1985. All of these resubmittals were the result of NRC staff reviews and the resultant questions which were discussed between Sequoyah Fuels and the staff. Upon receipt, each submittal was further reviewed to determine if the questions were adequately addressed and the appropriate commitments made by the licensee.

Also, concurrent with the review of the safety aspects of the renewal application review the staff conducted an environmental impact assessment of this proposed action as required by regulation. The preparation of this assessment was initiated under contract to Oak Ridge National Laboratory (ORNL), in February 1983, and was completed by the NRC staff in August 1985. One factor during this time was the effort necessary on the part of the NRC staff and the licensee to assemble and validate the database required to complete the assessment. A Finding of No Significant Impact was published in the Federal Register on September 13, 1985. There were no items which the staff would characterize as items of disagreement during the renewal review process. There were many issues discussed, most of which were resolved through revisions of the license application. For others, the staff imposed conditions on the license. The reasoning behind all of these conditions is discussed in the Safety Evaluation Report and the Environmental Assessment.

Because of the large volume of material related to the renewal review, it is being provided separately

QUESTION 2.

When the license was issued in September, 1985, the NRC placed several conditions on the license. List each condition, why the NRC staff thought a condition was necessary, and how the licensee met the condition. One of the conditions placed on the license required Kerr-McGee to report to the NRC within six months on the company's procedures for handling uranium hexafluoride cylinders, possible scenarios which could result in cylinder rupture, and actions which could be taken to prevent, or mitigate the effects of, such a rupture. Explain in detail why this condition was placed on the license. Include with this response all correspondence between the NRC staff and the licensee on this matter as well as all internal staff memoranda, letters, notes and all other related material pertinent to this item.

ANSWER.

Enclosed are the portions of the Safety Evaluation Report (SER) dated September 20, 1985, which discusses the NRC staff findings in the license renewal. Each of the license conditions is discussed in the SER including the rationale for the license conditions. These paragraphs are highlighted by lines in the right margin. For environmental license conditions, a further discussion of the requirement is contained in the Environmental Assessment (EA), NUREG-1157, which was submitted as part of the response to Question 1. The marked pages of the SER have been annotated with page references for the Environmental Assessment.

License Condition No. 11 contains requirements for reports on handling procedures for UF_6 cylinders and actions to mitigate the effects of a UF_6 release. ⁶ During the license renewal review, the staff was aware of incidents which occurred in 1977 at a French facility and in 1978 at DOE's enrichment plant in Portsmouth, Ohio. Due to the potential impacts of a large release of UF_6 , and the documented history of such events, the staff determined that a closer examination of handling procedures and mitigative measures by the licensee was appropriate. A more detailed discussion may be found on pages 21 and 22 of the SER and pages 4-41 and 4-42 of the EA. Other correspondence on this topic is part of the information submitted in response to Question 1.

ENCLOSURE
Question 2

4. Records

As specified in Chapter 2.10 of the license renewal application, all plant and personnel health physics data and reports shall be recorded and filed. The records of surveys and personnel exposure are retained in accordance with NRC regulations.

C. Inspections and Audits

Monthly inspections of radiation safety activities at the facility are conducted by the RSO in accordance with a written plan. A report summarizing the results is submitted to the Facility Manager.

Audits to evaluate and verify compliance with applicable federal and state regulations, NRC license conditions, permits, corporate policies, and facility procedures are conducted on a quarterly basis by the Director, Regulatory Compliance in accordance with a preconceived written plan. A formal report of findings, observations, and recommendations is prepared and submitted to the Director by Compliance Specialists who actually perform the audit. After review, the report is forwarded to the Facility Manager. This report also serves as an information base for the ALARA Committee.

D. Personnel Training

Radiation safety training is given to all personnel, including contract personnel, prior to working with source material. The training consists of both classroom and in-plant instruction in the areas of radiation safety, plant operations, equipment operations, and emergency procedures. A minimum of 6 hours of formal lecture and demonstrations related to health and safety is provided by health and safety personnel. An orientation checklist is maintained to assure attendance participation and coverage of the subject material.

Retraining is conducted by line supervision or health physics personnel at monthly safety meetings for continual employee awareness of safety.

E. Product Cylinder Handling

A large number of accident scenarios have been examined as part of the safety and environmental reviews. The staff has identified the rupture of a hot cylinder containing liquid UF_6 , resulting in the release of UF_6 to the main processing building and the environment, as the most likely scenario having potentially severe consequences for health, safety, and the environment.

Cylinders containing liquid UF_6 are moved and handled using a large forklift vehicle and an air driven weighing scale dolly. Hot cylinders are moved by forklift from the steam chests to the scales and from the scales to the storage area where cylinders are allowed to cool. The movement of cylinders involves both outdoor and indoor areas. In

general, cylinders are lifted only a short distance above the ground while being moved. Under these conditions, cylinders could be ruptured in a number of different ways including dropping and puncturing.

The consequences of a cylinder rupture resulting in the release of UF_6 include inhalation of highly soluble uranium (UF_6 and UO_2F_2) and HF, acid burns from HF in the air, and contamination of facilities and offsite areas. To allow for a detailed staff review of cylinder handling procedures and the plans for mitigating measures in the event of a release, the staff recommends that the following condition be incorporated in the renewed license:

11. Within 6 months of the issuance of this license, the licensee shall prepare and submit to the Uranium Fuel Licensing Branch the following reports. These reports shall contain sufficient detail and analysis to allow an independent review and shall contain licensee commitments for the actions described.
 - a. A report detailing handling procedures for product cylinders containing liquid UF_6 . The report shall include a detailed analysis of each step in the handling of hot cylinders and identify the possible scenarios which could result in cylinder rupture. The report shall also provide an assessment of the modifications and actions which could be taken to reduce the potential for a UF_6 release and justify the procedures being used.
 - b. A report detailing measures and actions to mitigate the effects of a UF_6 release. The report shall deal with the potential release of material within the facility and outside of the facility.

F. Conclusions

Sequoyah Fuels Corporation and its parent company, Kerr-McGee Corporation, have established as part of the license renewal application an organizational and administrative system for the safe operation of the Sequoyah Facility. Positions of importance have been filled with personnel which meet the minimum qualifications for their level of responsibility. Operations are conducted in accordance with approved written procedures or are subject to a radiation work permit system such that all activities at the facility have been evaluated for radiation safety and appropriate precautions established. Employees are provided with training prior to working with radioactive materials and are provided with refresher instruction as part of an ongoing safety program. The staff finds that the licensee's organizational and administrative commitments are sufficient to operate the facility and protect the health and safety of employees.

The Environmental Assessment contains a number of staff recommendations for conditions to ensure that operations continue to comply with the applicable state and federal standards. The staff recommendations may be implemented in the licensing process in several different ways including incorporation of the recommendations by the licensee into the license renewal application and by conditions written by the NRC staff at the time the license renewal is issued. Both of these options have been used to incorporate the staff recommendations into the license renewal. The following is a summary of the staff recommendations and the method of incorporation into the license:

1. The licensee shall sample the main stack continuously and analyze for gross alpha on a daily or weekly basis.

This condition has been incorporated by the licensee in Chapters 3.2.2 and 5.1.2 of the revised application dated August 23, 1985. The commitment made by the licensee was for the main stack to be sampled continuously and analyzed for gross alpha activity on a daily basis.

2. The average uranium concentration in the raffinate used in the fertilizer program shall not exceed 0.1 mg/l.

This condition has been incorporated by the licensee in Chapter 1.8 of the revised application dated August 23, 1985. The commitment made by the licensee is worded identically to the staff recommendation as it appeared in the Environmental Assessment.

3. Within 3 months of the renewal of this license, the licensee shall reevaluate the existing groundwater conditions in the area of the treated raffinate storage ponds and prepare and submit for NRC review a report which describes these conditions and either justifies the current monitoring program or proposes a new program for groundwater monitoring.

EA - pages
4-14, 4-15

The staff recommends that this condition be incorporated as Condition 12 of the renewed license.

4. Within 3 months of the renewal of this license, the licensee shall submit to NRC for review and approval a supplemental vegetation monitoring program to provide additional information for the radiological assessment on the ingestion pathway. The vegetation monitoring program shall include the sampling of food crops in the general area. The vegetation samples collected shall be analyzed for uranium, Ra-226, and Th-230. The licensee shall be able to use these data to assess the radiological impact to any member of the general public exposed from the ingestion pathway. A report of the findings shall be submitted to NRC for review. The program shall be initiated on the next growing season upon approval by NRC.

EA - pages
4-19

The licensee shall report the concentrations of radionuclides in vegetation on a dry basis and supply the percent moisture.

The staff recommends that the first part of this condition be incorporated as Condition 13 of the renewed license.

The second part of this condition has been incorporated by the licensee in Chapter 1.8 of the revised application dated August 23, 1985. The commitment made by the licensee was identical to the condition recommended by the staff.

EA - page
4-14

5. The licensee shall investigate and verify that the elevated uranium and nitrate concentrations found in Well FTP-2A are not the results of the liquid seepage from Ponds 3 or 4. A report of the investigation shall be submitted to NRC within 6 months from the date of renewal of the license.

The staff recommends that this condition be incorporated as Condition 14 of the renewed license.

EA - page
4-14

6. The licensee shall propose an appropriate surface water monitoring program to determine the total quantity of uranium discharged to the environs from the runoff drainage ditches which are not included in the NPDES permit. The proposed program shall be submitted to NRC for review and approval within 3 months from the date of renewal of the license.

The licensee shall investigate the cause of some of the elevated uranium concentrations in the above runoffs. Within 3 months from the date of renewal of the license, a report of the investigation shall be submitted to NRC. The report shall describe what mitigating measures, if any, were taken to eliminate the source(s).

The staff recommends that these conditions be incorporated as Conditions 15 and 16 of the renewed license.

EA - page
4-20

7. The licensee shall conduct a comprehensive soil/sediment radiological survey to determine the extent of uranium accumulation along the length of the effluent stream (001), at the confluence, upstream and downstream of the Illinois River, and along the intermittent runoff areas identified above (Number 6). The results of this survey and any recommendations for mitigation shall be reported to NRC within 12 months from the date of the renewal of the license.

The staff recommends that this condition be incorporated as Condition 17 of the renewed license.

8. The licensee shall follow the quality assurance program as specified in NRC's Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Program (Normal Operation)-Effluent Streams and Environment."

The NRC staff, in Chapter 4 of the Environmental Assessment, noted that because raffinate leakage had caused contamination of the soil and groundwater beneath and near Pond 2, Sequoyah Fuels was required to decommission Pond 2 and remove all sludges to a plastic-lined pond for temporary storage. This requirement was applied to the licensee as part of License Amendment 28.

The licensee has complied with this condition through the construction of Pond No. 6 and the initiation of sludge removal from Pond No. 2. Upon completion of the sludge removal, the licensee will decommission Pond No. 2. At the present time, the licensee has not provided for NRC staff review the plan for decommissioning the pond or the criteria which will be used in the decommissioning. The staff therefore recommends the following condition be added to the license:

18. The licensee shall submit for NRC review and approval the plan and criteria for decommissioning Pond No. 2 upon the completion of sludge removal from Pond No. 2.

Another recommendation made by the staff in the Environmental Assessment which was not reflected as a specific condition, was that the licensee set an action level on every sampling media. If an action level is exceeded, Sequoyah Fuels shall conduct an investigation and, if necessary, take mitigating measures. This action level and commitments for action when the level is exceeded are contained in Chapter 5.2 of the revised application dated August 23, 1985.

As part of License Amendment No. 28, the licensee was required to construct by September 1, 1985, a spare pond having capacity equal to or greater than Pond No. 5. Sequoyah Fuels has attained compliance with this condition through the construction of Pond No. 6. However, the staff believes that Sequoyah Fuels should maintain spare pond capacity at all times. Thus, the staff recommends the following condition be added to the license to ensure the licensee will always have a spare pond capability:

19. The licensee shall maintain a spare pond having capacity equal to or greater than Pond No. 5, unless the licensee's deep well injection plan has been approved.

X. FIRE SAFETY

The Sequoyah Fuels Corporation facilities have been constructed in accordance with National Fire Protection Association Codes and have been approved by the Factory Insurance Association. Noncombustible construction is utilized throughout the facility.

Fire protection for the solvent extraction building is provided by a foam deluge system which is capable of providing a foam-water mixture for approximately 8 minutes. A backup foam tank capable of producing an additional 8 minutes of deluge is also provided. Fire protection in the Main

Process Building is provided by 43 wall mounted extinguishers and sprinklers over electrical cable trays in congested areas. Surrounding the building is a 10-inch diameter fire water main with 6-inch laterals serving nine hydrant stations. The fire water system will supply 1,000 gpm at 100 psig to any hydrant. A minimum of 150,000 gallons of water are reserved for fire protection purposes in a water storage tank.

XI. DECOMMISSIONING PLAN

Chapter 7 of the license renewal application contains the decommissioning plan for the Sequoyah Fuels Corporation facility. This plan is similar to the plan approved by the NRC and incorporated as Condition No. 3 of the present license. Differences in the two plans relate mainly to the amount of descriptive material provided to support the plan assumptions.

Decommissioning of the facility has been assumed possible without the complete removal of all buildings. Certain floor areas and much of the equipment is assumed to be removed. The plan also assumes the fluoride and raffinate sludges have been processed and disposed of prior to the decommissioning action. Ponds and lagoons are assumed to be drained and the liners buried. According to 10 CFR Part 20, application may be made to the Commission for burial of radioactive material. Burial of material without the approval of the NRC is not allowed. The licensee has indicated that burial of materials shall not be made without the prior approval of the NRC.

Financial assurance of the performance by Sequoyah Fuels Corporation of its obligation to provide funds for decommissioning was provided by a letter to Mr. J. B. Martin from Mr. F. A. McPherson, President of Kerr-McGee Corporation, dated October 26, 1978. This letter is referenced in Chapter 7.5 of the license renewal application and will therefore become part of the renewed license.

The decommissioning plan provides an adequate description of the steps which will be necessary at the end of plant life to decommission the facility. However, the plan fails to make an explicit commitment on the part of Sequoyah Fuels Corporation to decontaminate and decommission the facility for unrestricted use. The staff therefore recommends the following condition be incorporated into the license:

20. At the end of plant life, the licensee shall decontaminate and decommission the facility so that it can be released for unrestricted use.

The decommissioning plan assumes, for the purpose of estimating costs and the efforts required at the time of decommissioning, that the processing of liquid and sludge waste materials is completed. The costs of processing of liquid and sludge materials is assumed to be part of the operating costs of the facility.

By letter dated May 24, 1985, Sequoyah Fuels submitted for NRC consideration a comprehensive solid waste disposal and storage plan in response to Condition 2 of License Amendment No. 25. This plan provides that raffinate sludge will be stored indefinitely onsite, consistent with the NRC Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations." While storage onsite may be acceptable as a temporary position, it does not provide a solution for the ultimate problem of disposal of these raffinate sludge materials. The staff therefore recommends that the following condition be added to the license to ensure that the licensee has, as part of the decommissioning plans and commitments, an acceptable plan for the ultimate disposal of these waste materials and has committed the financial resources to carry out the disposal plan.

21. The licensee shall, by October 1, 1986, prepare and submit changes to the decommissioning plan which provide for the permanent disposal of all solid wastes generated by the facility. The plan shall include an estimate of the costs involved in disposing of these wastes and the financial arrangements that have been or will be made to assure that adequate funds will be available to cover these costs at the time of disposal.

XII. RADIOLOGICAL CONTINGENCY PLAN

Sequoyah Fuels Corporation submitted a Radiological Contingency Plan for the facility on March 11, 1982, which was incorporated into the license as Condition No. 14. Chapter 8 of the license renewal application refers to this plan and provides a brief description of the actions which might be taken to mitigate the effects of an accident. The staff finds that the Radiological Contingency Plan dated March 11, 1982, remains appropriate for the facility and therefore recommends the following condition be added to the license to specifically incorporate this plan as a condition of the renewed license:

22. The licensee shall implement, maintain, and execute the response measures of his Radiological Contingency Plan submitted to the Commission on March 11, 1982. The licensee shall also maintain implementing procedures for his Radiological Contingency Plan as necessary to implement the Plan. The licensee shall make no change in his Radiological Contingency Plan that would decrease the response effectiveness of the Plan without prior Commission approval as evidenced by a license amendment. The licensee may make changes to his Radiological Contingency Plan without prior Commission approval if the changes do not decrease the response effectiveness of the Plan. The licensee shall maintain records of changes that are made to the Plan without prior approval for a period of 2 years from the date of the change and shall furnish the Chief, Uranium Fuel Licensing Branch, Division of Fuel Cycle and Material Safety, NMSS, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, and the appropriate NRC Regional Office specified in Appendix D of 10 CFR Part 20, a report containing a description of each change within 6 months after the change is made.

QUESTION 3: Supply our Subcommittees with a detailed sequence of events leading up to the accident at Kerr-McGee and immediately following it.

ANSWER:

The uranium hexafluoride (UF_6) product cylinder that ruptured at approximately 11:30 a.m. on January 4, 1986, was a 14-ton, model 48Y cylinder that was received at the Sequoyah Facility on September 20, 1985. The following is a sequence of events leading up to the cylinder rupture and actions taken by the licensee immediately following the accident as the staff presently understands it. It is based on interviews conducted by the NRC staff and information provided in writing by the licensee.

September 27, 1985

The cylinder was subjected to, and passed a 20-point quality inspection by a licensee engineer.

January 3, 1986

The cylinder was moved to the south fill bay of the process building and again subjected to the same 20-point inspection by a day shift operator. The operator connected the cylinder to primary trap No. 4 and loaded 1,230 pounds of UF_6 in the cylinder before emptying the trap. Primary trap No. 3 was connected to the cylinder and 10,000 pounds of UF_6 was added. At the end of the day shift, the operator recorded that 11,230 pounds of UF_6 had been loaded into the cylinder. At the end of the evening shift, the shift operator recorded that an additional 3,140 pounds of UF_6 had been added to the cylinder from the No. 3 primary trap and 9,060 pounds was added from the No. 2 primary trap. The operator summarized the record sheet by noting that the net weight of the cylinder was 23,430 pounds.

January 4, 1986

The midnight shift operator was aware that he would continue filling the cylinder during his shift. The shift operator noted in his paperwork at the start of the shift that 4,070 pounds of UF_6 was needed to fill the cylinder to the required load of 27,500 pounds. The operator initiated heating of a cleanup reactor trap (No. 6 trap) in order to continue filling the cylinder. Draining of this trap to the cylinder commenced at approximately 2:15 a.m.

At a registered net weight of 26,400 pounds, no more material could be added to the cylinder. The operator, who had never experienced this phenomenon before, investigated the cylinder orientation and its connection to the fill header. He discovered that one wheel of the cart holding the cylinder was not fully on the scales. The operator reoriented the cylinder cart so that all

of the cart wheels were on the scale platform. The registered net weight of the cylinder contents was 29,500 pounds. However, later investigation determined that the scale would not indicate weight beyond 29,500 pounds, and therefore, the exact weight of material in the cylinder is unknown.

The shift operator briefed the shift supervisor of the cylinder orientation that resulted in an apparent overfill of the cylinder, and the decision was made to initiate evacuation of material from the overfilled cylinder by use of vacuums available from previously emptied cold traps. This was in accordance with the written operating procedures. The operator aligned three traps -- a primary, secondary, and a cleanup -- with the header and the cylinder. The scale counterweight, previously adjusted to counterbalance the weight of the empty cylinder, was readjusted to allow the scale dial indicator to move off of its "pegged" position so that the pounds of UF_6 removed could be determined. The operator marked the location of the counterweight slide bar with a pen to note the point to which the weight must be returned later in order to indicate the correct weight of the cylinder contents.

The removal of UF_6 from the cylinder began at approximately 6:15 a.m.

At 8 a.m., the end of the shift, the operator recorded that the cylinder had been overfilled due to the cart not being fully on the scales. The operator briefed the oncoming day shift operator regarding the status of the cylinder, the scale adjustment, and the removal of UF_6 from the cylinder.

The day shift operator was unable to draw off additional material from the cylinder at approximately 9 a.m. The operator briefed the day shift supervisor who instructed the operator to transfer the cylinder to the southwest steam chest located outside the process building. The operator and supervisor agreed to heating the cylinder for approximately 6 hours to liquefy the UF_6 . This action was in violation of the licensee's written operating procedure. The cylinder would then be returned to the process building to resume material extraction. After moving the cylinder to the steam chest, the operator continued his other assigned duties. During heating of the cylinder, the fill valve was in a closed position and no means of venting the cylinder was provided.

The cylinder ruptured in the steam chest at approximately 11:30 a.m. releasing UF_6 . The UF_6 rapidly reacted with moisture in the air forming uranyl fluoride (UO_2F_2), consisting of solid particulates and hydrogen fluoride (HF), a gas. The resulting vapor cloud was carried south by southeast by a gusting 25 mph wind. The acidic vapor also entered the process building through the building ventilation intake registers. A control room

operator activated the evacuation siren which automatically shut down the ventilation system. He also shut down critical plant processes before he evacuated. Most of the approximately 40 workers at the site were in the lunch room and evacuated the building through the south exit near the plant offices or the west exit from the process building. Evacuees assembled at the North Gate area located northeast and upwind of the process building and the steam chest area.

At the time of the rupture the day shift operator, who heated the cylinder, was located in the scrubber building approximately 50 feet southwest of the steam chest where the cylinder ruptured. He was found on the lawn area southeast of the office building in a semiconscious condition and was immediately transported to the Sequoyah County Hospital by private automobile along with three other injured personnel.

A company employee (maintenance mechanic) on the site at the time of the accident, immediately called his wife at their private residence (located approximately 1-1/2 miles south of the Sequoyah Facility) and advised her to leave the area and to notify other residents of the accident.

Approximately 10 members of the staff immediately began spraying the ruptured cylinder with fire hoses from an upwind position. Fog nozzles were used in an attempt to suppress the airborne release of the material. The release continued for approximately 40 minutes.

The licensee's Health Physics and Industrial Safety Manager was onsite at the time of the incident and assumed the lead and directed the licensee's immediate response to the accident. This manager, assisted by two secretaries and other staff, initiated the following actions at approximately 11:40 a.m.:

1. The Sequoyah County Hospital in Sallisaw, Oklahoma, was notified that four personnel with respiratory injuries were being transported by private automobiles to the hospital.
2. A private physician in Vian, Oklahoma, was notified and requested to provide medical assistance at the Sequoyah Facility. The physician arrived at the Facility at approximately 12:15 p.m. and began examinations of personnel.
3. The Gore, Oklahoma, Police Department was notified and requested to provide assistance in making further notifications to other law enforcement agencies and to block Interstate 40 and Oklahoma State Highway 10 to prevent traffic flow through areas that may have been

impacted by the release. The Gore Police Department notified the Sequoyah County Sheriff's Department and the Oklahoma Highway Patrol in Sallisaw, Oklahoma, to initiate traffic control to the facility and areas along Oklahoma State Highway 10 and Interstate 40 affected by the accident.

4. The licensee's Director of Nuclear Licensing and Regulation in the licensee's corporate office in Oklahoma City was notified of the accident and briefed on the conditions at the facility and the status of injured personnel. The licensee's Director of Nuclear Licensing and Regulation, with assistance from other staff personnel, made further notifications to the Oklahoma State Department of Health, The U.S. Nuclear Regulatory Commission (through a staff member of the Office of Nuclear Material Safety and Safeguards), Oklahoma Highway Patrol in Muskogee, Oklahoma, the Sallisaw, Oklahoma, Police Department, and other members of the corporate staff of the Kerr-McGee and Sequoyah Fuels.
5. Key personnel of the plant staff, including health physics technicians, were notified and requested to report to the facility.

QUESTION 3: Additionally, please provide the following: (a) At what time did management or supervisory personnel become aware that the accident had taken place?

ANSWER:

Supervisory personnel at the facility were immediately aware of the accident from the sounding of the facility evacuation alarm and the vapor cloud which enveloped the facility. The facility manager (who was in Oklahoma City at the time of the incident) was notified along with other corporate officers at approximately 11:40 a.m.

QUESTION 3:

(b) At what time did the company notify federal officials? What agencies, in addition to the NRC, were notified and at what time? Specifically identify what federal officials were notified and specify by whom.

ANSWER:

Kerr-McGee Corporation's Director of Nuclear Licensing and Regulation made initial notification to the U.S. Nuclear Regulatory Commission at approximately 12 noon through a staff member of the Office of Nuclear Material Safety and Safeguards. The NRC staff member notified the NRC operations center at approximately 12:15 p.m. The company did not notify any other federal officials although inquiries about the accident were received at the facility between 1 and 1:30 p.m. from the U.S. Environmental Protection Agency's Regional Office in Dallas, Texas, and the U.S. Coast Guard.

QUESTION 3:

(c) When were State officials notified?
Specifically identify what state officials were notified and specify by whom.

ANSWER:

The office of the Oklahoma State Department of Health was notified at approximately 12 noon by Kerr-McGee Corporation's Director of Nuclear Licensing and Regulation. Neither the Chief of the Oklahoma Radiation and Special Hazards Service nor the Director of the Oklahoma Radiation Protection Division were in the office. The Director, Oklahoma Radiation Protection Division, was notified at his home at approximately 12:05 p.m. by the Licensee Director of Nuclear Licensing and Regulation.

QUESTION 3: (d) Specifically identify what local officials were notified and by whom. When were they first told that a highly hazardous chemical had spilled at the Kerr-McGee facility? When were representatives of the news media advised that the accident had occurred?

ANSWER:

The Gore, Oklahoma, Police Department was notified by a member of the facility staff at approximately 11:40 a.m. The police department was informed of the release and the hazardous chemical (HF) associated with the release, and the company representative requested assistance in further notifications and traffic control. Kerr-McGee believes that representatives of the news media first learned of the accident by monitoring the local police radio network. A local radio station reported the accident at approximately 12 noon. Representatives of the local news media were briefed at approximately 3 p.m. at the South Gate to the facility by the Kerr-McGee Corporation's Director of Communications.

QUESTION 3: (e) When was the general public first notified that an accident had occurred? At the time the public was informed were any instructions given on how to minimize exposure to the chemical and what steps to take to protect one's health?

ANSWER:

A portion of the general public (those in the immediate downwind area of the facility) was made aware immediately after the accident occurred as a result of a company employee calling his private residence and visual observation of the vapor cloud. Vapor cloud travel time to these downwind residents was approximately 5 minutes. A member of the general public called the Sequoyah County Health Department after observing the vapor cloud. The individual was instructed to leave the area and report to the hospital for medical examination. The individual notified other nearby neighbors to evacuate the area and to go to the hospital. News of the accident was broadcast by a radio station in Sallisaw, Oklahoma, but carried no details or instructions to the public. The source of the radio station's information has not been determined.

At approximately 12:30 p.m., the Sequoyah Fuels Manager of Industrial Relations and Services drove to all of the private residences located in the immediate downwind area of the facility. He explained the event and instructed those residents he found at home to go to the hospital for examination.

QUESTION 4.

Please provide a summary of the operational record of Kerr-McGee and all NRC on-site inspections of this Kerr-McGee facility. Include in this summary the purpose and extent of the NRC's inspections, the qualifications of the personnel who inspected the facility, the dates of each inspection, and the findings they made since 1980.

ANSWER.

Five routine inspections and one special inspection of the Sequoyah Fuels facility were performed by qualified NRC fuel facility inspectors from NRC's Region IV office during the 1980 - 1985 period. The purpose of the five routine inspections was to determine if the Sequoyah facility was in compliance with the applicable portions of NRC regulations 10 CFR Parts 19, 20, 30, and 40, as well as other specific conditions required by the license issued to Sequoyah Fuels by the NRC. The special inspection was limited to the areas of waste burial and environmental monitoring. The inspection scope of the five routine inspections were those of the annual overall inspections as required by the NRC Inspection and Enforcement Manual, Chapter 2600. Chapter 2600 specifies the frequency of inspections and lists the procedures required to be completed during each routine inspection.

The NRC has found a total of 12 violations and deviations from its requirements during the 1980 - 1985 inspection period. The NRC judges the significance of violations of regulations and license conditions according to the NRC Enforcement Policy 10 CFR Part 2 Appendix C (1985). This policy classifies the significance of a violation using a numerical scale (1-5).

Category 1 and 2 violations are the most significant and are addressed with enforcement conferences and escalated enforcement action that includes orders or civil monetary penalties. Category 3 violations are addressed with enforcement conferences that may or may not result in orders or civil penalties. Category 4 and 5 violations and deviations are the least significant and are resolved by issuing a notice of violation or deviation that requires corrective action by a certain date. During the period in question, the Sequoyah facility has not been cited for violations that resulted in escalated enforcement action.

A summary of these inspections, inspectors' qualifications and inspection program requirements are attached.

Enclosure
Question 4

SUMMARY OF QUALIFICATIONS NRC INSPECTORS OF THE SEQUOYAH FUELS PLANT

Scope

This summary of qualifications includes the qualifications of the five NRC inspectors who inspected the Kerr-McGee (Sequoyah Fuels Corp.) plant at Gore, Oklahoma and who still work for the NRC. It does not include one ex-inspector whose records are no longer available.

Education

Three of the five inspectors have a bachelors degree in science or engineering; one of those three also has a masters degree in environmental science. The other two inspectors have the equivalent of a bachelors degree based on education and training in engineering and radiological safety and related experience.

Professional Experience

All of the NRC inspectors are professional employees with professional experience averaging 18 years. (A range of 15 to 26 years for 4 of the inspectors and 6 years for the fifth inspector.) That experience has been concentrated mainly in the field of radiological safety although it includes some individual experience in the Occupational Safety and Health Administration inspection program, quality assurance, manufacturing of radiation sources, and research. Four of the inspectors have management experience in directing a safety program for their employer. In terms of regulatory safety experience, the inspectors have from 4 to 11 years experience making inspections to determine compliance with federal regulations and license conditions.

COMPLIANCE HISTORY
SEQUOYAH FUELS CORPORATION

INSPECTION DATE(S)

FINDINGS

August 29, 1985

No violations or deviations. (Special inspection of waste burial and environmental monitoring)

March 11 - 15, 1985

Two violations and one deviation were found as follows:

1. Failure to clean up promptly smearable alpha contamination exceeding 2,000 dmp/100 cm² as required by a license condition. The NRC inspector found a spot that exceeded 120,000 dpm/100 cm². (Severity Level IV)
2. Failure to post an area with a sign stating: CAUTION - RADIATION AREA as required by 10 CFR 20.203(b). The sign is required whenever the radiation level is such that a major portion of the body could receive a dose in excess of 5 millirem in any hour. Contrary to that, the inspector found an area where the radiation level was 15 millirem/hr at gonad height. (Severity Level V)
3. There was inadequate control to ensure that only unused, clean respirators would be available for use by employees. (Deviation)

July 17 - 19, 1984

Three violations were found:

1. Contrary to a license requirement, several gauges containing radioactive material were removed from service, relocated or reinstalled by the licensee rather than the gauge manufacturer or other persons authorized by the NRC. (Severity Level IV)
2. Contrary to a license condition, a gauge was stored in a licensee warehouse without its shutter being locked. (Severity Level IV)
3. Contrary to a license condition, a sealed source was not leak tested for contamination within the required six months. (Severity Level V)

Inspection Requirement: One inspection per year of all topics defined in IE Manual Chapter 2600.

INSPECTION DATE(S)

FINDINGS

February 14 - 18, 1983

Two violations were found:

1. Severity Level IV violation:
Failure to perform surveys.
2. Severity Level IV violation:
Failure to properly sample HF off gas stack.

February 22 - 25, 1982

Three violations were found:

1. Severity Level IV violation:
Inadequate surveys for airborne uranium.
2. Severity Level VI violation:
Improper posting of radiation area.
3. Severity Level V violation:
Failure to sample main plant stack.

NO INSPECTIONS PERFORMED IN 1981.

July 23 - 25, 1980

One infraction was found:

1. Straps of half-mask respirators worn over hard hat rather than head.

TABLE 1

FUEL CYCLE INSPECTION PROCEDURES		INSPECTION FREQUENCIES ^{1,6}		
Number	Title	Minimum	Normal	Resident ²
30703 ³	Management-Entrance/Exit Interviews	Ea. Insp.	Ea. Insp.	
88005	Management Organization & Controls	Annual	Semiannual ⁴	
	1. Organizational Structure			
	2. Procedure Controls			
	3. Reviews & Audits			
	4. Safety Committees			
	5. Quality Assurance Programs			
88010	Operator Training/Retraining	Annual	Semiannual ⁴	
	1. New Employee Indoctrination			
	2. Ongoing Training			
	3. Retraining			
88015	Criticality Safety	Semiannual ⁴	Triannual ⁴	As Needed
	1. Facility Modification and Changes			
	2. Nuclear Criticality Safety Analysis			
	3. Audits			
	4. Criticality Calibrations and Monitoring Systems			
	5. SNM Containers			
	6. Procedures			
88020	Operations Review	Semiannual ⁴	Triannual ⁴	As Needed
	1. Conduct of Operations, Facility Modifications and Changes, Safety Limits/LCOS			
	2. Housekeeping			
	3. Fuel Handling and Storage			

See footnotes at end of table.

FUEL CYCLE INSPECTION PROCEDURESINSPECTION FREQUENCIES ^{1,6}

<u>Number</u>	<u>Title</u>	<u>Minimum</u>	<u>Normal</u>	<u>Resident</u> ²
88025	Maintenance/Surveillance Testing 1. Maintenance 2. Surveillance Testing 3. Calibrations	Annual	Semiannual ⁴	
83822	Radiation Protection 1. Radiation Protection Procedures 2. Instruments and Equipment 3. Exposure Controls 4. Posting and Labeling 5. Surveys 6. Notification and Reports	Annual	Semiannual ⁴	As Needed
88035	Radioactive Waste Management 1. Liquid Effluents 2. Airborne Effluents 3. Records and Reports 4. Effluent Monitoring Instruments 5. Procedures 6. Radioactive Solid Waste 7. Waste Burial 8. Storage of High Level Liquid Waste	Annual	Semiannual ⁴	As Needed
86740	Transportation of Radioactive Materials 1. Routine Maintenance of Re-usable Packages 2. Packaging & Transportation Activities 3. Part 61 Requirements for Waste Generators (Waste Manifest)	Annual	Semiannual ⁴	Monthly

See footnotes at end of table

INSPECTION FREQUENCIES 1.6

FUEL CYCLE INSPECTION PROCEDURES

<u>Number</u>	<u>Title</u>	<u>Minimum</u>	<u>Normal</u>	<u>Resident</u> ²
88045	Environmental Protection 1. Management Controls 2. Quality Control/Analytical Measurements 3. Program Implementation	Annual	Semiannual ⁴	As Needed ⁵
88050	Emergency Preparedness 1. Off Site Support Agencies 2. Emergency Plans, Procedures, Facilities and Equipment 3. Tests and Drills 4. Fire Protection	Annual	Semiannual ⁴	As Needed
84850	Inspection of Waste Generator Requirements of 10 CFR 20 and 10 CFR 61	Annual	Annual	

See footnotes at end of table

Issue Date: 05/23/84

T1-4

Issue Date: 05/23/84

FUEL CYCLE INSPECTION PROCEDURESINSPECTION FREQUENCIES ^{1,6}

<u>Number</u>	<u>Titles</u>	<u>Minimum</u>	<u>Normal</u>	<u>Resident</u> ²
83890 ³	Closeout Inspection & Survey		As Needed	
83890 ³	Confirmatory Survey of Decom-			
	missioning plants		As Needed	
83895 ³	Followup on Expired Licensees		As Needed	
86100 ³	10 CFR 21 Inspections		As Needed	
90712 ³	Inoffice Review of Events		As Needed	
92701 ³	Followup on Inspector ID Problems		As Needed	
92702 ³	Followup on Noncompliance		As Needed	
92703 ³	IE Bulletin/CAL Followup		As Needed	
92704 ³	Followup on HQ Requests		As Needed	
92705 ³	Followup on Regional Requests		As Needed	
92706 ³	Independent Inspection		As Needed	As Needed
92709 ³	Licensee Plans for Coping with Strikes		As Needed	
92710 ³	Licensee's Initial Implementation of			
	Strike Plans		As Needed	As Needed
92711 ³	Continued Implementation of Strike Plans			
	During an Extended Strike		As Needed	As Needed
92712 ³	Resumption of Normal Operations After a Strike		As Needed	As Needed
92715 ³	Review of Part 21 Reports		As Needed	
92716 ³	Followup on Part 21 Reports		As Needed	
93700 ³	Inspector Sent to Site		As Needed	
93710 ³	Followup on Significant Events		As Needed	As Needed

See Footnotes at end of table

FUEL CYCLE INSPECTION PROCEDURESINSPECTION FREQUENCIES^{1,6}

<u>Number</u>	<u>Title</u>	<u>Minimum</u>	<u>Normal</u>	<u>Resident</u> ²
94700 ³	Participation in ACRS Meetings		As Needed	
94702 ³	Participation in Licensee Meetings		As Needed	

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1. See IE MC 2600-042.
 2. Minimum and normal.
 3. Generic procedures.
 4. For UF-6 processors independent Spent Fuel Storage facilities and uranium mills --annually; criticality safety does not apply for natural uranium facilities.
 5. Following significant release.
 6. Solution mining, ore buying, byproduct recovery and other small uranium operations may be excluded from these frequencies and assigned frequencies deemed adequate by the region.

QUESTION 5.

Please provide the licensee's emergency response plans, as submitted to the NRC, including information relevant to Kerr-McGee's plans to inform Federal, State, local officials and the general public about any accident that might take place and about actions citizens should take to protect their health. For each of the responsibilities facing Kerr-McGee in notifying the various agencies at the Federal, State and local level, designate which are a part of the license.

ANSWER.

Enclosed are copies of the licensee's Radiological Contingency Plan dated March 11, 1982, and its supplement dated August 24, 1984. All of the commitments made in this Radiological Contingency Plan are incorporated into the license by Condition No. 22.

ENCLOSURE
Question 5

QUESTION 8. Has the NRC reviewed and approved each written procedure required by the licensee?

ANSWER

The NRC does not review and approve each procedure prior to use by the licensee to carry out Operational and Health and Safety Programs, either at the time they are conceived or during the licensee review and evaluation. Instead the NRC has required, through the license, that the licensee establish, maintain, and adhere to written procedures for operational and radiation safety activities. The NRC inspection staff reviews selected radiation safety procedures during each inspection and verifies that all procedures have been developed and approved by the licensee according to license requirements.

QUESTION 9.

Does the Commission have the legal authority to regulate the handling of non-radiological hazardous chemicals at facilities it licenses? Are there any legal restrictions on NRC's authority to regulate such chemicals? Provide our Subcommittees with a legal analysis addressing this matter.

ANSWER.

Under the Atomic Energy Act of 1954, as amended, the Commission's primary responsibility is to regulate the use of source, byproduct, and special nuclear material in order to protect the health and safety of the public and of those who may be occupationally exposed. The National Environmental Policy Act requires the Commission, as it does all Federal agencies, to take into account environmental values and to mitigate environmental harm from the activities it regulates. In the regulation of source, byproduct and special nuclear material under these authorities it is frequently difficult to draw a clean line of authority between radioactive materials clearly subject to the Commission's authority and other chemicals used in the processing of the Atomic Energy Act materials.

The Commission believes that questions on Commission jurisdiction and authority over hazardous chemicals are best answered with respect to a set of facts where the chemical and chemical process can be analyzed in relation to the regulated nuclear activity and the radiation hazard involved.

In general, Atomic Energy Act radioactive materials are to be found in the form of chemical compounds, solutions, or alloys with other elements. No matter what chemical or physical form source, byproduct, or special nuclear material may take, it remains subject to the Commission's authority. (The only exceptions are those allowed by the Atomic Energy Act itself for the Department of Energy and certain military uses). Because of this fact, the Commission believes that its authority under the Atomic Energy Act is adequate to regulate radiological hazards regardless of the various chemical and physical forms in which source, byproduct, and special nuclear material occur.

More difficult questions are posed by the fact that many of the regulated uses of nuclear materials also present non-radiological health hazards and are accompanied by ancillary chemical processes that in themselves do not involve nuclear materials. For example, a plant for conversion of uranium oxide to uranium hexafluoride will have a separate operation for the production of fluorine to be used in the conversion process. Such a separate chemical process is not regulated by the Commission since it does not involve nuclear material. Only when the chemical is reacted with the nuclear material does the Commission exercise its authority over the process for the purpose of ensuring public health and safety. Sealed sources in gauges would present another example.

These sources are subject to Commission regulation, but the Commission has never undertaken to exercise authority over the chemical processes monitored with these gauges. Put simply, in the area of nuclear materials regulation under the Atomic Energy Act, generally regulation by the Commission has been related in some reasonable manner to the radiological hazards of source, byproduct or special nuclear material and to the radiation hazard presented by these materials. Cf., New Hampshire, v. Atomic Energy Commission, 406 F.2d 170 (First Cir. 1969). (We do not address here the much more complex issues presented by the regulation of production and utilization facilities under the Atomic Energy Act.)

Mitigation of environmental impacts under the National Environmental Policy Act presents a separate issue. The Commission conditions licenses to monitor and reduce the environmental impacts of licensed activities. This frequently involves the application of EPA or State environmental standards covering hazardous chemical effluents under legislation such as the Clean Air Act or Safe Drinking Water Act. The Commission does not, however, under the limitations of Section 511(c)(2) of the Federal Water Pollution Control Act regulate non-radiological effluents in point discharges into watercourses covered by permits under that Act.

Hazardous chemical effluents from uranium mills may also be regulated by the Commission under the Uranium Mill Tailings Radiation Control Act and EPA regulations in 40 CFR 192.

QUESTION 10.

It has come to our attention that the Department of Energy issued guidelines several years ago on the handling of uranium hexafluoride which advises against the reheating of any overfilled container, such as the one reheated by Kerr-McGee. Was the NRC staff aware of this instruction, and if so, did the NRC take any steps to issue regulations, technical specifications or other requirements in the license and did the NRC staff notify the company of this guideline?

ANSWER.

The document apparently being referred to is ORO-651 "Uranium Hexafluoride, Handling Procedures and Container Criteria" issued by the Atomic Energy Commission (AEC) in 1966 and revised several times. Persons on the NRC staff were aware of and had copies of this document. The AEC provided copies of ORO-651 to all persons engaged in the handling of UF_6 , including Kerr-McGee, Sequoyah Fuels. Sequoyah Fuels UF_6 handling procedure specifically prohibited the heating of over-filled cylinders, and there is a condition in the license that specifies that procedures must be followed.

QUESTION 11.

Did company supervisory or management personnel approve of the practice of reheating overfilled cylinders at the Sequoyah facility or have any knowledge of this procedure? Had other overfilled cylinders ever been reheated before at this facility, and if so was it with or without the knowledge of management? List all instances where overfilled cylinders were reheated.

ANSWER.

Based on the preliminary results of employee interviews and a review of documentation, it was determined that overfilling of cylinders by approximately 100 pounds and reheating was not an uncommon practice. After reheating, the excess amount of UF₆ was eventually removed from cylinders during the sampling process. Decisionmaking regarding the reheating of cylinders overfilled by these small amounts apparently occurred at the first-line supervisory level and no other approval was necessary. The degree of licensee management awareness or involvement has not yet been established. In addition to the cylinder that ruptured, interviews of employees indicated that in the past a few cylinders had been overfilled by amounts from approximately 500 to 1000 pounds of UF₆ and reheated. These statements have not yet been confirmed by a records review.

About twenty percent of the approximately 100 14-ton cylinders that were filled at the Sequoyah facility in 1985 were overfilled by approximately 100 pounds and reheated. Investigation of matters related to this question is ongoing.

QUESTION 12. What are the qualifications of supervisory and management personnel at this facility? Has the NRC ever reviewed their qualifications? If so, supply a summary of NRC findings.

ANSWER.

The qualifications of supervisory and management personnel for Sequoyah Fuels Corporation and the Sequoyah Facility were provided in Section 11.5, pages II.11-8 through II.11-23 of the license renewal application. A copy of this application was provided as part of the response to Question 1. The Facility Manager is now Mr. William L. Utnage. A copy of his resume is enclosed.

The NRC review and findings on education and experience for supervisory and management personnel is given on pages 18, 19, and 22 of the Safety Evaluation Report dated September 20, 1985. A copy of this report was provided as part of the answer to Question 1.

QUESTION 6.

Does the license issued by the NRC contain any regulatory requirements or provisions regarding chemical operations at the facility? To what extent does the license address chemical operations at the facility? If the license does contain regulatory requirements or guidelines regarding chemical operations, were these developed by the NRC, EPA, or the licensee? If chemical operations requirements were developed by the NRC, did the NRC receive independent technical assistance from EPA or other agencies with some expertise in this area?

ANSWER.

The license issued by the NRC is solely for the possession and use of Materials (source, special nuclear, and byproduct) covered by the Atomic Energy Act of 1954, as amended. Chemical operations which use licensed materials are evaluated to determine that they are sufficient to meet NRC regulatory requirements. The precautions taken to contain the licensed materials are appropriate to contain any chemicals associated with the licensed materials. Ancillary operations which do not involve NRC licensed material, such as the fluorine plant operation at the Sequoyah Fuels Facility, are not reviewed by the Commission staff; however, the overall environmental impact of these operations are addressed in our environmental assessment (including the impact from chemicals). If adverse impacts, outside of NRC's regulatory authority, are identified the appropriate federal agency or state authority is notified. No adverse impacts were identified for the Sequoyah facility.

QUESTION 7.

In addition to the NRC, list what other federal agencies have jurisdiction over this facility and under what statutory authority. Additionally, please provide all documents, including correspondence, and interagency and intraagency memoranda since 1980 relating to this facility, or similar facilities, where the NRC has licensing authority but shares jurisdiction over parts of the facility.

ANSWER.

The specific roles of other federal agencies as they relate to this and other fuel facilities regulated by NRC is the subject of an ongoing effort. On January 22, 1986, NRC representatives met representatives from OSHA and EPA to discuss the roles of the three agencies. Additional meetings are planned. Until further progress is made on this task we are unable to give a definitive description of the roles of other agencies.

The only specific correspondence from OSHA regarding agency jurisdiction at the Sequoyah facility is a letter from OSHA, dated January 16, 1986. A copy is enclosed as Enclosure I. Also enclosed is a copy of a "working agreement" guideline used by NRC for interfacing with OSHA.

ENCLOSURE I
To Question #7

QUESTION 13.

Did the cylinder which ruptured meet the requirements of 49 CFR 178? Had the cylinder ever been certified or licensed by NRC or any other federal agency? Has this cylinder actually been tested for a road accident or fire? Is there, or has there ever been a limit on the amount of uranium hexafluoride allowed in such a cylinder? If so, and the limit no longer applies, please explain when and why this condition was lifted.

ANSWER.

49 CFR 178 is a Department of Transportation (DOT) regulation. The NRC staff has not evaluated the container against DOT regulations.

The NRC certified the Model No. 48Y cylinder design on January 22, 1976, as meeting the normal conditions of transport (e.g., 1-foot free drop, 130°F day in sunlight, etc.). The Department of Energy (DOE) may also have certified the Model No. 48Y cylinder. The cylinders are fabricated in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code. The NRC certification was not renewed after November 30, 1985, because of an NRC rule change effective September 6, 1983, and corresponding changes in DOT regulations. The rule change reclassified natural uranium such that the NRC certification was no longer required. The packaging and transport of natural uranium hexafluoride, after the rule change in 1983, are subject to the requirements of the DOT.

We are not aware of any tests for a road accident or fire that have been conducted on the Model No. 48Y cylinders.

A limit of 27,560 pounds on the amount of uranium hexafluoride permitted in the cylinder was specified in the 1976 NRC certification. The changes in NRC and DOT regulations in 1983 removed the limit on the quantity of natural uranium which may be shipped as Low Specific Activity (LSA) material. As indicated before, NRC certification was not renewed because it had been superseded by the changes in the regulations.

QUESTION 14.

If the NRC determines that Kerr-McGee did not follow its license with respect to this accident, what action could the Commission take against the licensee? What are the Commission's enforcement powers with respect to chemical as well as radiological accidents?

ANSWER.

The Commission has broad authority to take enforcement action for violations of Commission requirements. In addition to notices of violations, civil penalties may be imposed for violations of the licensing provisions of the Atomic Energy Act and regulations, license conditions, and orders issued for any violation for which a license may be revoked. Licenses may be suspended and revoked. The Commission may also seek injunctive relief in the Federal courts for violations of Commission requirements. Criminal sanctions are available for certain willful violations of Commission requirements.

The Commission also has authority to impose additional restrictions on a licensee by order to govern the possession and use of licensed material and to govern any activity authorized pursuant to the Atomic Energy Act in order to protect health or to minimize danger to life or property.

It is clear that the Commission has the authority to take enforcement actions for violation of its regulatory requirements. The Commission may impose additional restrictions on licensees by issuing enforcement orders to address the specific hazards of radiation. Enforcement orders may also be issued to impose additional requirements to address certain non-radiological hazards. However, in the absence of a violation of a specific NRC requirement, an analysis of the circumstances surrounding a chemical accident is required to determine whether it is sufficiently related to the licensed material or activity to exercise the Commission's enforcement authority.

QUESTION 15.

Has there been consideration of having the Sequoyah facility licensed or regulated by other Federal agencies? If so, provide all documents relating to this issue.

ANSWER.

The specific roles of other Federal agencies as they relate to fuel facilities regulated by NRC is the subject of an ongoing effort by the NRC. Upon conclusion of this effort more detailed information of the roles of Federal agencies will be identified. There is no question that the facility must be licensed under the Atomic Energy Act to conduct activities with source material, and that NRC is the proper agency to license the facility. The State of Oklahoma could exercise licensing functions by entering into an agreement pursuant to Section 274 of the Atomic Energy Act, but it has not chosen to do so.

QUESTION 16.

What expertise does the Commission have at hand to regulate, inspect, or license the chemical operations of licensed facilities? Provide a summary of qualifications of NRC personnel charged with licensing, inspecting and regulating chemical operations.

ANSWER.

The NRC staff that licenses and inspects chemical facilities which possess and use licensed materials is made up of many technical disciplines including Health Physicists, Physicists, Chemists, Chemical Engineers, and Environmental Engineers. If a specific expertise is necessary that is not available in-house, it is procured from a contractor that has the expertise.

QUESTION 17. When will the Kerr-McGee Sequoyah facility be allowed to restart? Will the Commission vote on the question of restart?

ANSWER.

The staff considers restart to refer to the resumption of production of uranium hexafluoride. The licensee has not yet submitted a plan detailing the activities to be pursued, and has not requested permission to resume production. Currently, the authorization to restart will be given by the NRC staff with the Commission being kept informed of NRC staff actions. To date the staff has only authorized resumption of receipt and storage of uranium concentrates which were enroute to the facility at the time of the accident.

The Commission is scheduled to receive a status report from the staff and representatives of Kerr-McGee on March 13, 1986.