

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 40-08027/86-08

License: SUB-1010

Docket: 40-08027

Licensee: Sequoyah Fuels Corporation (SFC)
Kerr-McGee Center
Oklahoma City, Oklahoma 73125

Facility Name: Sequoyah Fuels Facility (SFF)

Inspection At: Gore, Oklahoma

Inspection Conducted: July 28 through August 1, 1986

Principal Inspectors: D. B. Spitzberg, Senior Health Physicist
C. A. Hackney, Emergency Preparedness Analyst

Other Inspection

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8-27-86
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8/27/86
Date

Inspection Summary

Inspection Conducted July 28 through August 1, 1986 (Report 40-08027/86-08)

Areas Inspected: Special, announced team inspection of the corrective actions implemented by the licensee in response to 23 items identified as either apparent violations, deviations, or open items in NRC Inspection Report 40-08027/86-02 dated May 9, 1986, and a review of licensee adherence to the commitments described in the NRC Confirmatory Action Letter dated January 17, 1986. These items had remained open following the previous inspection on June 9-12, 1986 (NRC Inspection Report 40-08027/86-07).

Results: Of the 23 items reviewed, 22 were closed out during the inspection. This total included 11 apparent violations, 4 apparent deviations, and 7 open items. One item, apparent violation 40-08027/86-02/13, was not closed out during this inspection and will remain open until after the pending restart to allow the licensee to complete the on-the-job training of operators and walk down evaluations of modified plant equipment. In addition, the one remaining open item related to the NRC Confirmatory Action Letter, dated January 17, 1986, is considered closed as the followup to this item will be tracked with the Notice of Deviation attached to NRC Inspection Report 40-08027/86-05, dated June 25, 1986.

DETAILS

1. Persons Contacted

- *S. D. Emerson, General Manager
- *W. L. Utnage, Facility Manager
- *L. R. Lacey, Manager, Safety, Industrial Hygiene and Health Physics
- L. A. Tharp, Area Manager
- *S. P. Knight, Manager of Administration and Services
- *D. R. Swaney, Manager, Quality Assurance
- D. R. Knoke, Manager, Laboratory
- C. A. Grosclaude, Manager, Industrial Hygiene and Health Physics
- G. Barton, Manager, Procedures and Training
- *J. V. Marler, Operations Manager
- *S. Munson, Health Physicist
- *S. R. Fryer, Jr., Acting Manager, Engineering
- D. Morrow, I&C Supervisor

The NRC inspectors also contacted and interviewed several other facility managers, employees, and consultants.

*Denotes those individuals present at the exit meeting.

2. Licensee Action on Previous Inspection Findings

a. NRC Confirmatory Action Letter

(Closed) NRC Confirmatory Action Letter, dated January 17, 1986. After the accident at the facility on January 4, 1986, the NRC issued the subject letter which confirmed licensee commitments in six areas.

NRC Inspection Report 40-08027/86-07 documented that commitments had been met in five of the six areas. The item had been left open because of an apparent deviation identified in the Notice of Deviation dated June 25, 1986, related to the commitments for cold trap operation. The licensee's response letter dated July 22, 1986, to the Notice of Deviation has been reviewed by the Region IV staff and was found to contain sufficient information to close out this item.

b. Apparent Violations

(Closed) Apparent Violation (40-08027/86-02/12): Failure to Meet Personnel Education and Experience Requirements. This item was left open pending the satisfactory completion of retraining of shift supervisors according to the program described in the licensee's response letter of May 28, 1986. This letter contained a commitment by the licensee to have each supervisor complete a comprehensive retraining program in general and specific subject areas including

detailed instruction on all procedures applicable to his area of responsibility. In addition, the program called for each supervisor to demonstrate knowledge and understanding of the subjects covered through successful completion of a written examination. By letter dated August 8, 1986, the licensee revised their commitments concerning retraining of operations supervisors to exempt from certain specific training those supervisors who participated in giving the training or who developed the lesson plans. This exemption would be approved by the facility manager and the individual would still be required to test out on the material. The NRC inspector determined during the inspection that the operations supervisors who had been exempted from certain training had met the revised criteria.

(Open) Apparent Violation (40-08027/86-02/13): Failure to Carry Out a Training Program for Operating and Maintenance Personnel. The NRC inspector examined training files and held discussions with the training staff and individual employees and determined that all facility employees had completed the general orientation and emergency training, and operations personnel had been retrained in their assigned tasks as committed to by the licensee. This item will remain open beyond the startup date to allow for the pre-startup walk down training of operators who will be using modified plant equipment, and the completion of the licensee's on-the-job training program.

(Closed) Apparent Violation (40-08027/86-02/15): Failure to Control Access to Controlled Areas and Failure to Have Operational Intrusion and Television Systems as Described in the License Application. At the time of the inspection the new electronic security system planned for the Sequoyah Facility was in the process of being installed. The licensee has proposed in its June 25, 1986 license revision request to have this more effective intrusion detection system in place in lieu of the previous system using closed circuit television monitors. Until such time as the new system is operable, the licensee has implemented compensatory measures for access control which includes increased surveillance of the protected area by security personnel.

(Closed) Apparent Violation (40-08027/86-02/16): Failure to Post Areas Containing Radioactive Material in Accordance With 10 CFR 20.203(e)(2). This item was being left open pending submittal of a license amendment request to change the definitions for facility control areas as committed to by the licensee in their response letter of May 28, 1986. The NRC inspector determined that this license amendment request was submitted by letter dated June 25, 1986, and included the newly proposed definitions for controlled areas in Section 3.1.

(Closed) Apparent Violation (40-08027/86-02/17): Failure to Have the Required Emergency Equipment Specified in Section 6.0 of the Contingency Plan. The NRC inspector determined that emergency

equipment specified in the Contingency Plan had been received and that Contingency Plan Implementing Procedures (CPIP) and check list had been completed. Licensee representatives stated that training had been conducted for personnel that would be responsible for conducting the equipment inventories.

(Closed) Apparent Violation (40-08027/86-02/18): Failure to Make Reports Required by 10 CFR 20.403(d)(2). The NRC inspector determined that the CPIP notification procedure encompassing this regulation had been completed and approved by the licensee. Licensee representatives stated that training of appropriate emergency response personnel and communicators had been completed.

(Closed) Apparent Violation (40-08027/86-02/19): Failure to Conduct Training in Emergency Response Procedures. The NRC inspector verified that lesson plans had been completed and approved. Licensee representatives stated that required training for onsite and offsite emergency response personnel had been completed.

(Closed) Apparent Violation (40-08027/86-02/20): Failure to Perform the Required Review of the Contingency Plan and Procedures. The NRC inspector verified that Contingency Plan review procedures had been developed and implemented.

(Closed) Apparent Violation (40-08027/86-02/21): Failure to Report Changes to the Facility Contingency Plan. The NRC inspector verified that administrative procedures had been developed and implemented for Contingency Plan and CPIP review and submittal.

(Closed) Apparent Violation (40-08027/86-02/22): Failure to Provide and Maintain Procedures in Certain Radiation Safety-Related Activities. The NRC inspector determined that procedures had been developed and implemented and training conducted in the procedures to cover the 11 areas specified in NRC Inspection Report 40-08027/86-02. The procedures implemented for these areas were:

- ° HS-301, Revision 0, June 13, 1986, "Radiation and Contamination Monitoring"
- ° HS-007, Revision 0, July 2, 1986, "Radiological Safety Audits and Inspections"
- ° HS-001, Revision 0, June 16, 1986, "Establishing and Posting Control Areas"
- ° HS-406, Revision 0, July 7, 1986, "Operation and Calibration of the Frontier Model FE 259 Test System"
- ° G-301, Revision 0, July 24, 1986, "Solid Waste Management"

- ° HS-009, Revision 0, July 21, 1986, "Health Physics Reports and Records"
- ° HS-506, Revision 0, June 16, 1986, "Laundry Facility Operations"
- ° HS-404, Revision 0, July 2, 1986, "Health Physics Portable Instrument Calibration"
- ° HS-402, Revision 0, July 24, 1986, "Calibration and Maintenance of Air Sampling Equipment"
- ° HS-401, Revision 0, July 7, 1986, "Calibration and use of R0-2 Survey Instruments"
- ° HS-006, Revision 0, July 2, 1986, "Health and Safety Technician Qualification and Training"
- ° HS-801, Revision 1, July 24, 1986, "Airborne and Liquid Effluent Monitoring"
- ° HS-802, Revision 0, June 24, 1986, "Environmental Radiological Monitoring"
- ° HS-808, Revision 0, July 2, 1986, "Collection, Preparation and Shipment of Fruit and Vegetable Samples"

(Closed) Apparent Violation (40-08027/86-02/24): Failure to Properly Post an Airborne Radioactivity Area. The NRC inspector verified the implementation and training in procedure HS-001, "Establishing and Posting Radiation Control Areas," which satisfies the licensee's commitments for corrective action to this item.

(Closed) Apparent Violation (40-08027/86-02/25): Failure to Perform Weekly Surface Contamination Surveys in Controlled Areas. The NRC inspector reviewed two procedures which had been developed to satisfy the licensee's commitments for corrective action to this item. The procedures, HS-301 "Radiation and Contamination Monitoring," and HS-005 "Health Physics Routines" were found to have been implemented and appropriate personnel training completed.

c. Apparent Deviations

(Closed) Apparent Deviation (40-08027/86-02/23): Failure to Have Available and Operable Survey Instruments Specified in Section 12.6 of the License Application. The NRC inspector reviewed a licensee submittal dated July 24, 1986, in which a license revision was requested for Section 12.6 Instruments. On the date of the inspection, it was determined that the licensee was in possession of all the instruments referenced in the revision request. The NRC inspector also reviewed the newly implemented procedure HS-404 "Health Physics Portable Instrument Calibration" which addresses

instrument readiness by specifying quarterly functional checks and instrument calibration and response checks to be performed before use.

(Closed) Apparent Deviations (40-08027/86-02/30, 31, and 32): Discrepancies Between License Application System Descriptions and As-Built Systems. The NRC inspector reviewed the licensee's license revision request submitted on June 25, 1986, which included the following descriptions of the as-built systems:

- ° Compressed air system and compressed breathing air supply (Section 10.2.3)
- ° Cooling Water System (Section 10.2.4)
- ° Fire Protection System (Section 10.2.4)

d. Open Items

(Closed) Open Item (40-08027/86-02/01): This item concerned the Contingency Plan not addressing offsite agency support and medical treatment, and providing training to offsite support agencies. The NRC inspector determined that this item could be closed based upon the licensee's having completed the lesson plans and training of offsite support agencies.

(Closed) Open Item (40-08027/86-02/02): Emergency equipment should be dedicated and controlled for emergency purposes only. During this inspection, the NRC inspector found that the licensee had received all new emergency equipment and storage cabinets and had implemented an inventory procedure.

(Closed) Open Item (40-08027/86-02/03): Emergency kits should be inspected quarterly to ensure the presence of required supplies and equipment. This item is closed due to the development and implementation of a CPIP for inspecting emergency kits and check lists.

(Closed) Open Item (40-08027/86-02/05): Onsite personnel should be provided timely information as to evacuation routes, assembly areas, and other pertinent information concerning the emergency. This item is closed due to the development of a notification procedure and installation of an onsite personnel address system. Licensee representative stated that training had been completed for emergency response personnel.

(Closed) Open Item (40-08027/86-02/06): Improvement needed in the licensee's training program in radiation safety, plant operations, equipment operation, and emergency procedures. This item was being held open until after restart in order to verify the licensee's commitments to conduct prestart-up walk-down training for operators

and supervisors of the modifications in the UF₆ fill station and HF scrubber system, and the on-the-job training for plant personnel referenced in the response letter of May 28, 1986. This training is encompassed in the corrective actions pending for Apparent Violation (40-08027/86-02/13) and will continue to be tracked with that item.

(Closed) Open Item (40-08027/86-02/09): Document control program that controls the preparation, review, approval, and revision of facility procedures and drawings. The licensee's response letter dated May 28, 1986, did not specifically address the document control program with regard to facility drawings. By letter dated August 8, 1986, the licensee submitted additional response which had been prepared during the NRC inspection. The response assigned responsibility for maintaining, reviewing, and updating facility drawings and for maintaining centralized control over drawings. The NRC inspector spoke with the acting manager of engineering during the inspection and verified that this drawing control system had been implemented as described.

(Closed) Open Item (40-08027/86-02/11): The licensee's radiological instrument calibration program does not contain all the essential elements recommended in American National Standards Institute Standard ANSI N323-78 and NRC Draft Regulatory Guide Task OP 032-5. The NRC inspector reviewed newly implemented procedures HS-401, Revision 0, "Calibration and Uses of RO-2 Survey Instruments," and HS-404, Revision 0, "Health Physics Portable Instrument Calibration" and found that the ANSI Standard N323-78 was listed as a reference with the applicable recommendations of the Standard and the Draft Regulatory Guide OP 032-5 incorporated into the bodies of the procedures.

3. Allegation Review

Since the accident of January 4, 1986, the NRC has received several allegations concerning conditions and operations at Sequoyah facility. The NRC inspectors reviewed each allegation in detail during the inspection and in some cases requested information assists from NRC-NMSS (licensing). The following represents the NRC findings with regard to each allegation:

- a. Allegation - Erroneous recording of environmental data (wind speed, direction, temperature, etc.; specifically on October 17, 1984) (Case 4-86-A-063).

NRC Review

The NRC inspector conducted interviews with the following: the Manager Health Physics and Industrial Hygiene, Health Physics Technician, Environmental Clerk, Instrumentation and Controls Supervisor, Meteorological Technician for the National Weather Service, Ft. Smith Arkansas, and the Meteorologist for National

Climatic Data Center in North Carolina. Additionally, the NRC inspector reviewed the wind speed and direction strip charts for the 24 hour period for October 17, 1984, and the daily report log for October 17, 1984.

The NRC inspector determined through conversations with operations and environmental personnel that the licensee's temperature data were obtained from a mercury thermometer located inside the restricted area, outside on a post, near the administration building. The temperature is not recorded on a recorder. The licensee had reported a temperature of 64°F at 0700 hours on the Daily Radiological & Environmental Status Report (DR&ES) for October 17, 1984. In Fort Smith, Arkansas, the National Weather Service recorded temperatures of: 43°F at 0548 hours 44°F at 0651 hours and 48°F at 0750 hours. Time is recorded in Central Standard Time for both locations. The National Climatic Data Center data indicated that the temperature for the Tulsa, Oklahoma, area was 42-degrees at 0649 hours and McAlester, Oklahoma, reported 43 degrees at 0651 hours. Both temperature recordings were for October 17, 1984. The NRC inspector reviewed other selected DR&ES reports and determined that the licensee had reported a temperature of 40°F at 0700 hours on October 16, 1984, and reported a temperature of 39°F at 0700 hours on October 18, 1984. It appears that the temperature was either erroneously reported or 46°F was typed as 64°F.

The NRC inspector reviewed wind speed and wind direction strip charts for the time period October 17, 1984. The DR&ES report stated that the wind direction at 0600 hours was from the North and the wind speed was 5 miles per hour (mph). The strip chart was read by the NRC inspector for the 0600 time period and the strip chart read wind direction from the North at 10 mph, however, the wind speed dropped to approximately 6 mph in approximately 15 minutes. The DR&ES report stated that the wind was from the East at 10-15 mph. The NRC inspector read the strip chart for the time period 1400 hours which indicated wind direction from the East at approximately 13 mph. The DR&ES report stated that the wind direction at 2200 hours was from the East at 15 mph. The NRC inspector read the strip chart for the time period 2200 hours and the wind direction was from the East at approximately 14 mph. It should be noted that the strip charts are not marked as to the time the readings are taken. The recorder chart drive may or may not keep the paper synchronization with real time. The licensee's operators did date stamp the chart paper on a frequency of 1-3 days.

The NRC inspector inquired as to how the wind speed, wind direction and temperature data was used for environmental data calculations. The Manager Health Physics and Industrial Hygiene stated that the information was not used for any routine environmental calculations,

however, the information would be used during an emergency. It appears to the NRC inspector that the DR&ES report would not be used for an emergency. The licensee would rely on real time data during an emergency.

Conclusion

The allegation was found to be correct in part, however, no safety significance was established. The 0700 temperature reading on October 17, 1984 of 64 degrees does appear to be incorrect. It appeared to the NRC inspector that it was misrecorded by human error.

No violations or deviations were identified by the NRC inspector.

- b. Allegations - The previous plant manager did not possess the required college degree.
 - The SFF health physics officer is only a high school graduate and is therefore unqualified (Case 4-86-A-063).

NRC Review

The function of key personnel on the staff of SFC and the education and experience requirements were reviewed in detail during the special NRC team inspection of February 10-14, 1986. The findings, documented in paragraph III of NRC Inspection Report 40-08027/86-02 noted that with one exception, SFC staff met the requirements of their license. The exception related to the previous facility manager not having met certain education requirements. This was identified as an apparent violation. The current facility manager and the manager of Health Physics and Industrial Safety were found to meet license requirements for education and experience.

Since the accident of January 4, 1986, SFF has augmented their staff as described in the licensee's response letter dated May 28, 1986. Among the changes was the creation of new permanent positions for manager for administration and services, procedures and training, quality assurance, and safety, industrial hygiene and health physics.

Conclusion

The allegations were found to be correct in part and had been previously addressed by NRC enforcement action. The NRC inspectors determined that SFF staff meet the qualification requirements of the license.

No violations or deviations were identified by the NRC inspectors.

- c. Allegation - Deliberate misplacement of the external environmental air sampling monitors which don't work most of the time (Case 4-86-A-063).

NRC Review

In the license renewal application dated August 23, 1985, SFC proposed to continue the environmental air monitoring program which was in place at that time. This program and the location of the environmental air samplers had last been modified by NRC Order dated January 28, 1980, by relocating an air sampler to a position close to or at the nearest residence. Since 1980, the positions of air samplers have remained unchanged and have been evaluated by the NRC NMSS staff in the Environmental Assessment dated August 1985 (NUREG-1157), and their positions verified by NRC inspectors as a routine inspection activity. The location of the samplers was last verified on July 1, 1986, when a Region IV inspector accompanied an EPA representative to observe the samplers. The location of the samplers have been selected to a large extent to accurately reflect airborne concentrations of plant emissions in the direction of local resident populations (i.e., nearest resident, Carlisle school, I-40).

The NRC inspector reviewed the monitoring results of the environmental air monitors to determine the history of operation for each location. The hi-volume sampler located at the nearest residence has an odometer for total volume sampled which would indicate sampler failure as a function of relative volume sampled between sample changeouts. For 1984-85, the range of quarterly air volumes sampled was $1.07 \times 10^6 \text{ ft}^3$ to $3.04 \times 10^6 \text{ ft}^3$ with a mean $2.16 \times 10^6 \text{ ft}^3$. This variation reflects some failures related to pump carbon vane problems experienced at this location. These failures, however, do not influence the accuracy of the measured air concentrations. Hi-volume pump failures of this nature are not uncommon in industry, and provided timely corrective maintenance is performed, are not an issue of concern to the NRC.

The data for the four fenceline air samplers located in each of the cardinal compass directions was reviewed for the period January 1985 to the date of the inspection. The samplers, which are collected daily are noted in the log as "down" or "no sample" when a failure has occurred. The data showed that only eight daily samples were not obtained during this period. The five offsite lo-volume environmental air samplers are collected weekly and also show "no sample" when a failure has occurred. Their operational reliability is reflected in the following chart:

<u>Sample Location</u>	<u>Operational Period Reviewed</u>	<u>Number of Weeks No Samples Collected</u>	<u>Percent of Time Operational</u>
Asphalt plant	10/15/73-09/10/85	17	97
Carlisle farm	12/13/73-01/09/86	23	96
Carlisle school	10/15/73-09/10/85	9	99
64 Hwy. north	10/15/73-09/03/85	34	95
I-40 south	10/15/73-09/10/85	20	97

Conclusions

The allegations were not found to be correct. The NRC inspector determined that the environmental air samplers are positioned in locations that have been evaluated by the NRC and are adequate to assess environmental airborne concentrations of monitored plant emissions. It was also determined that the operational reliability of the environmental air samplers has, in general, met or exceeded industry experience with such sampling systems.

No violations or deviations were identified by the inspectors.

- d. Allegation - A leak similar to the January 4, 1986, one occurred a year ago (case 4-86-A-006).

NRC Review

The NRC inspectors reviewed all SFC's daily radiological and environmental status reports for January 1985. The reports revealed normal offsite air sampling results for fluoride and uranium, indicating no significant releases from the facility. These reports also indicated no significant in-plant problem that could have resulted in an offsite release.

The SFC's 1985 injury summary report indicated that two workers received HF burns to the legs while attempting to replace a flange on a fluorine compressor. The injuries resulted from a spray of HF condensate and the absence of protective equipment as specified on the hazardous work permit. The injuries resulted in lost time for both workers.

Conclusion

Based upon the above findings, it was concluded that an offsite release similar to the accident on January 4, 1986, did not occur and the allegation is not substantiated.

No violations or deviations were identified by the NRC inspectors.

- e. Allegation - A holding pond for radioactive waste has been leaking (Case 4-86-A006).

NRC Review

The NRC has been aware of evidence of pond leakage in Pond 2 since it was first revealed by the licensee through its pond leakage monitoring program. The NRC staff had reviewed the groundwater monitoring data around Pond 2 and concluded that the data shows higher nitrate concentrations in wells near the south and east embankments,

with slightly higher concentrations for gross-alpha, uranium, and Ra-226, as compared to values at wells further away. The monitoring program has not detected any serious contamination of groundwater resources beyond a small zone near Pond 2, which is far removed from nearby potential residential users of groundwater. Nevertheless, the staff considered the continued leakage from Pond 2 was undesirable and required Sequoyah Fuels to cleanup Pond 2 and remove all the sludges to a plastic-lined pond (license amendment 28). At present Sequoyah Fuels has initiated the cleanup of Pond 2 to eliminate the potential source of contamination.

Conclusion

The allegation was found to be correct, however, the NRC has been aware of the Pond 2 leakage, has evaluated it, and has caused the licensee to begin mitigating action in the form of pond decommissioning.

No violations or deviations were identified by the NRC inspector.

- f. Allegation - Sulfuric acid comes from Sequoyah Fuels stacks (Case 4-86-A-006).

NRC Review

The NRC inspector questioned the Operations Manager and the UF₆ Area Manager concerning sulfuric acid sources. They stated that two small storage tanks of sulfuric acid with capacities of 1000 gallons and 700 gallons are the sole potential sources of sulfuric acid on site. One of these sources is used to control pH in the cooling tower water and the other as an agent dripped into the fluoride sludge ponds to facilitate calcium fluoride neutralization. Neither source is tied into the plant stack.

The NRC inspector reviewed various documents to ascertain the components of the stack gas with respect to sulfur compounds. According to the licensee's Environmental Report Supplement dated June 1972, sulfur dioxide (SO₂) is a minor constituent of stack discharge accounting for a maximum ground level concentration beyond the facility fence of 0.2 ppm. This is well below the limit specified of 5 ppm. The NRC's Final Environmental Statement of 1975 states that sulfur dioxide is discharged from the combustion of a small amount of hydrogen sulfide (H₂S) in the filtered hydrogen stream leaving the UO₃ reduction reactors and an additional amount (approximately 65 lb/month) is produced from the combustion of natural gas in the hydrogen burners. The SO₂ effluent rate was specified at 0.583 g/sec which yields a concentration at the closest unrestricted area of 0.039 µg/m³. The ambient air quality standard was listed as 60µg/m³.

Another potential source of sulfur compound emissions is the nitrogen oxides emission control system (NOXEC) in which a proprietary compound (not sulfuric acid) is used as an agent in the scrubbing liquid. In this system pH must be maintained above 7 or the compound can decompose with the evolution of hydrogen sulfide. In order to prevent this, pH control alarms for the system are located in the control room which are set to alarm when pH falls below 9 with the automatic addition of caustic to raise pH. In addition, there are two H₂S alarms located at the NOXEC tank which activate at 10 ppm H₂S.

No information was provided by the alleged as to the basis of this allegation. Since no licensee or NRC data had been reported to suggest sulfuric acid emissions, the NRC inspector examined the most probable basis of the allegation as being possible sulfur odors emanating from the facility. To this end, two possible connections were identified. It was determined that an Oklahoma Natural Gas supply line junction terminal is located at the northeast section of the SFF where a tank of mercaptans is used for the addition of the distinctive odor to natural gas. Licensee representatives stated that at times when this tank has been refilled or spillage had occurred, this offensive odor had been known to linger in the vicinity of the facility. Another possible source of natural gas odors was a 4-inch gas pipeline leak in the 55 psig Vian feed line which purportedly had existed for 2 years adjacent to the SFF and had only been repaired in June 1986.

Conclusion

The allegation was not found to be correct. The NRC inspector could find no information to suggest that sulfuric acid has been emitted from the plant stack.

No violations or deviations were identified by the NRC inspector.

- g. Allegation - an acid release occurred on 5-7-84 that caused damage to windshields and paint. Payment for damage was made. (Case-4-86-A-068).

NRC Review

The NRC inspector conducted interviews with the following licensee personnel: General Manager, Area Manager, UF₆ Area Manager, Manager Industrial Relations. The NRC inspector reviewed selected entries that had been made by the shift supervisors into their daily log book and selected entries made by the operators in the operator's log book. The inspector conducted interviews with selected plant personnel concerning events that occurred or may have occurred on the

above mentioned date. Additionally, the NRC inspector reviewed onsite and offsite environmental fluorine sample data for the month of May 1984. The NRC inspector determined by interviews with the General Manager, Area Manager, the UF_6 Manager, and reviewing the above mentioned log books that on May 7, 1984, a Hydrofluoric Acid (HF) leak was reported as emanating from one of the stacks. Investigation by the operations and maintenance personnel revealed that a release of HF had occurred.

Following the incident on May 7, 1984, the licensee paid claims to 33 employees who had their vehicles inside the company's fence and one person (not an employee) that lives northeast from the plant. It should be noted that the EPA was not notified of the HF release. The plant General Manager stated that the release of HF did not meet or exceed the release limits specified in the EPA guidelines and was not required to be reported.

Conclusions

The allegation was found to be correct, however, the release appeared to be local in nature. Based on information in the licensee's log books and from interviews with licensee personnel, the licensee did have a HF release on May 7, 1984. A review of offsite environmental sample data for May, 1984 did not reveal any significant increases in fluoride values.

No violations or deviations were identified by the NRC inspector.

- h. Allegation - Rumors of digging holes and putting barrels of waste in them (Case 4-86-A-068).

NRC Review

The NRC inspector met with the Manager, Industrial Hygiene and Health Physics and the Senior Health Physics Technician who stated that no burials of any type of waste had occurred since January 1981. Burials of crushed drums of uranium contaminated waste did take place with full disclosure to the NRC between September 10, 1970, and January 21, 1981, under 10 CFR 20.304. This regulation allowed land burial of up to $1 \times 10^5 \mu Ci$ of natural uranium at any one location and not to exceed 12 burials per year under specified burial conditions set forth in the regulation. This regulation went out of existence late in 1981.

These burials and associated records had been reviewed during routine inspections. During this inspection, the NRC inspector reviewed summary reports of the burials which showed that the burials were made within the limits of 10 CFR 20.304. Also reviewed were detailed survey drawings of the locations of the two refuse disposal sites used for the burials. Both areas lie within the licensee's controlled area (fenced). The records showed that from

September 1970 to January 1981 there were 24 waste burials made consisting of a total of 51,000 ft³ of material containing an estimated 675,000 μ Ci of natural uranium.

Conclusion

The allegation is correct, however, the NRC inspector found no information to indicate that waste drums had been illegally buried at the Sequoyah Fuels Facility.

No violations or deviations were identified by the NRC inspector.

- i. Allegation - We are wondering if they haven't been operating since they were officially closed because we hear an awful lot of noise from there at night . . . , also just about every time I pass there you can see smoke coming from the short stacks on the east side of the plant (Case 4-86-A-068).

NRC Review

The NRC inspectors reviewed with SFC management the activities that have taken place since the accident of January 4, 1986. The construction activity on the new UF₄ facility, the main plant modifications and vendor deliveries at night may explain the noise in the late evenings, however, night shift work has been minimal. The NRC has observed through several inspections since January 4, 1986, the physical modifications to the plant and other changes that would have precluded operation of the plant. Intensive maintenance and cleanup work may have given the impression that the plant was in operation. Additionally, the facility power consumption as reflected in the Oklahoma Gas and Electric Company billing indicates that the consumption from January through May of 1986 was 1/3 of the amount for the period July to December 1985. This indicates that the fluorine cells, a high electric power user, were not in operation to generate F₂ and therefore no UF₆ can be produced.

The smoke observed from the short stacks was likely due to steam releases. The licensee has maintained one steam boiler in operation at all times. Boiler blow down occurs for 20-30 seconds every 4 hours. Another source of smoke may have been natural gas smoke when another boiler is started up.

Conclusion

The allegations were found not to be correct. Based on the above findings, it was concluded that the plant has not operated to produce UF₆ since the accident of January 4, 1986, and the allegation is not substantiated.

No violations or deviations were identified by the NRC inspectors.

- j. Allegation - The allegor states that Kerr McGee has built excess storage tanks in Webbers Falls on highway 64 about 10 miles from their plant and her husband had observed personnel drilling wells out in the field. Further, the allegor stated that she saw a tank truck dumping right on the ground on the side of highway 64, right where the tanks were out in the field.

The allegor states further that at midnight between January and March 1986, an unidentified tank truck stopped at a "rest area" on highway 64, which is nearby the "excess storage tanks" previously mentioned, and proceeded to place a hose on the ground and dump a liquid (Case 4-86-A-069) (Case 4-86-A-074).

The allegor states that "raffinate" contains numerous toxic materials including radioactive material and objects to indiscriminate disposal of "nuclear waste" (Case 4-86-A-063).

NRC Review

The NRC inspector reviewed the entire process of transferring treated raffinate liquid to tank trucks, transportation of the liquid to the applications sites and application of the liquid to lands owned by Kerr-McGee. The liquids are pumped from storage ponds on SFC property to tank trucks operated by a contracted service. The liquid is metered into each truck under the supervision of a SFC employee. A portion of each truck load is collected for analysis. The amounts dispensed into trucks are recorded as well as the time each truck leaves the loading location. Interviews with the truck drivers indicated that they have been instructed to proceed directly to the application site and return for refill without stopping. The NRC inspector visited the SFC Rabbit Hill property on highway 64, the rest stop on highway 64, and the Monsanto ranch property now owned by Kerr-McGee. Visual observations at the "rest area" and the roadway into the Rabbit Hill property did not reveal any evidence of dumping of liquids. The "excess storage tanks" belong to SFC and are placed on SFC land. These tanks were used in the past to temporarily store raffinate liquids prior to application on the Rabbit Hill property. The licensee is required under the raffinate application authorization to drill and sample monitor wells on lands where liquids have been applied. This is necessary to monitor the movement of nitrates into sub-soils and ground water.

The NRC inspector also visited the Monsanto ranch land where liquids are currently being applied. The tank trucks are logged in and out of the fields by a SFC employee, while another employee directs the truck driver to the exact field location for application.

A licensee representative stated that the application of raffinate liquids began in May 1986 on SFC lands near the facility, in

June 1986 on the Rabbit Hill property and in July 1986 on the Monsanto Ranch property. The application of liquids after dark is not permitted.

"Raffinate" is a term used to describe the aqueous phase of a solvent extraction process. These acidic liquids at Sequoyah are neutralized and treated with Barium to further reduce naturally occurring Radium-226, a constituent of the original uranium ore. This treated raffinate liquid is stored at the facility until application can be made during the growing season. The treated raffinate liquid is essentially a solution of ammonium nitrate with trace amounts of metals including small amounts of naturally occurring Radium-226 and Thorium-230 isotopes. These liquids have been extensively analyzed over the years and the constituents compared to applicable standards. The NRC has concluded that the application of these liquids should have no significant impact on cattle or humans when applied under the conditions specified in the Sequoyah license.

Conclusions

The allegations were found to be correct in part. No safety significance was established. Based on the above findings, the NRC inspector concluded that the storage tanks and the monitor wells on Kerr McGee's Rabbit Hill property are related to the NRC authorized raffinate application program. Whether raffinate liquids were dumped on the ground near highway 64 could not be confirmed or denied, however, there is no visual evidence of any dumping on the roadway.

With regard to the dumping of liquid at the "rest area" on highway 64, the evidence indicates that SFC did not begin its application of raffinate until May 1986 and application is during daylight hours. Therefore, the allegation was not confirmed.

The NRC inspector concluded that the application of raffinate liquids is a NRC licensed activity, and therefore is not indiscriminate disposal of nuclear waste. The raffinate does contain trace amounts of metals and naturally occurring radioisotopes, however, these materials only become toxic or hazardous when sufficient quantities are present. The amounts of these constituents are strictly controlled. This allegation is not substantiated.

No violations or deviations were identified by the NRC inspectors.

- k. Allegation - SFC had permission to put 11,000 pounds of uranium per year into the Arkansas River, by leave of an Oklahoma Water Resources Board permit which expired July 11, 1982 (Case 4-86-A-070).

NRC Review

The State of Oklahoma Water Resources Board has issued a permit to SFC for certain nonradiological effluents including total suspended solids, fluoride, nitrate, oil and grease. The permit also requires

monitoring for these parameters as well as discharge flow, pH, uranium, radium, gross alpha and beta radiation. The permit does not set limits for uranium discharge.

The NRC inspector reviewed the current permit No. WD-75-074 issued to SFC which went into effect on July 12, 1977, and has an expiration date of July 11, 1982. The Oklahoma Water Resources Board regulation 1020.3 states, in part, that the conditions of an expired permit are continued in force until the effective date of a new permit where: (1) the permittee has submitted a timely and complete application for a new permit, and (2) the board, through no fault of the permittee, does not issue a new permit with an effective date on or before the expiration date of this previous permit. Sequoyah Fuels Corporation submitted its request pursuant to item (1) above by letter dated June 9, 1982. Therefore, permit WD-75-074 is valid and will remain in effect until such time that a new permit is issued by the State of Oklahoma.

The NRC regulates the discharge of uranium in the liquid effluent of SFF. The applicable regulation is 10 CFR 20.106 which limits the concentrations of radioactive material in water that can be released to unrestricted areas. For natural uranium this limit is $3 \times 10^{-5} \mu\text{Ci/ml}$ averaged over 1 year. The SFF discharges uranium via the combined effluent stream (CES) to the Arkansas River. This discharge point has been sampled continuously for flow and uranium to demonstrate compliance with 10 CFR 20.106.

The NRC inspector reviewed 1985 data for uranium concentrations in the CES and found that the maximum monthly average was the fraction 0.029 of the maximum permissible concentration (MPC). On monthly effluent and miscellaneous uranium loss records, the license had calculated the mass of uranium discharged via the CES based upon measured flow volumes and concentrations as follows:

	<u>lbs U</u>
1980	14,975
1981	8,943
1982	15,265
1983	9,906
1984	4,877
1985	3,964

By contrast the NRC inspector calculated the 1985 allowable discharge of uranium based upon total CES flow at 1 MPC to be 312,000 lb.

Conclusion

The allegations were not found to be correct. The NRC inspector determined that the licensee possesses a valid Oklahoma Water

Resources Board discharge permit and that discharges of uranium to the Arkansas River have been well below the applicable limits as specified by the NRC.

No violations or deviations were identified by the NRC inspectors.

1. Allegation - KM misrepresented their initial Environmental Impact Assessment (not Statement) that, based on data from the National Weather Service in Fort Smith, Arkansas, that the wind is predominately from the east (Case 4-86-A-063).

NRC Review

The NRC inspector was unable to locate the document referred to by the allexer. An Environmental Report dated November 1971 which was first submitted by the licensee in accordance with Appendix D of 10 CFR 50 was reviewed as was a Supplemental Report dated June 1972. These reports included wind rose data submitted by the licensee. The data in the Environmental Report was measured at the plant site between March 28, 1971 and November 8, 1971. The data in the Supplement was for several measurement periods from January 2, 1971 through March 31, 1972, with no reference as to where the measurements were made. These data indicated a trend of slightly predominant wind patterns from the easterly direction. In addition, the Supplemental Report contains a table of annual percentage frequency of occurrence of wind directions by speed groups measured at Fort Smith, Arkansas, from March 1953 through February 1963 (Appendix IV, Table II). This data showed a predominant wind pattern from the east northeast and northeast directions. The Fort Smith data that was used in the report to calculate potential impact of releases from the facility was the Table 1 data for diffusion meteorology, wind direction versus Pasquill stability. This data provided the basis for calculating both the annual average elevated and ground release atmospheric dilution factors.

According to Section 3.2.3 of the Environmental Assessment dated August 1985 (NUREG-1157), the meteorological data used for calculating atmospheric dispersion was obtained from Fort Smith, Arkansas from 1955-1974. This data showed that the predominant wind direction is to the north with the next most frequent direction being to the south (NUREG-1157, Appendix A, Table A.6). Since the data sets were obtained from a meteorological station not under the licensee's control, the accuracy of the data could not be verified. The NRC inspector found no evidence to suggest that the Fort Smith data was altered or misrepresented by the licensee. It did appear, however, to the NRC inspector that the data sets from Fort Smith, Arkansas, did conflict with each other in terms of predominant wind patterns. Since the measurement periods differed, this issue will be referred to meteorological specialist in licensing to examine if the data is conflicting. Recognizing that there may be differences between local wind patterns and those at Fort Smith, the staff required KM to set up air monitoring stations near the residential

areas to measure actual radiological air concentrations rather than rely on meteorological modeling to estimate air concentrations at these areas.

Conclusions

The allegation was not found to be correct. The NRC inspector could find no evidence that weather data obtained by the licensee from the weather station at Fort Smith, Arkansas, was misrepresented to the NRC. A review of data sets for wind direction patterns did show a possible conflict between trends suggested by data measured at the Fort Smith Station during different periods. This issue is being referred to NRC licensing for review. No violations or deviations were identified by the NRC inspectors.

4. Site Visits by Other Federal Agency Representatives

During the week of the NRC inspection, a representative from both the Federal Emergency Management Administration and the Environmental Protection Agency visited the site to review aspects of the licensee's Contingency Plan and local emergency preparedness. Their findings will be forwarded to the NRC for review prior to facility restart.

5. Exit Briefing

The NRC inspection team met with the licensee's representatives denoted in paragraph 1 at the conclusion of the inspection. Discussed were the status of open items following the inspection and the remaining issues awaiting completion or resolution prior to restart.