FOR Info Only

Subject: CHANGE ROOM PROCEDURE

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1/7/303

I-40

1.0 INTRODUCTION

1.1 Purpose

This procedure provides instruction for all personnel entering or exiting the Restricted Area via the men's or women's change rooms (1) to prevent the spread of radioactive contamination to unrestricted areas of the facility and (2) to minimize the potential for internal exposure through sound contamination control practices.

1.2 Responsibility

1.2.1 It is the responsibility of each person working within the Restricted Area to follow this procedure and for each supervisor to assure that the procedure is being followed by the personnel under his/her supervision.

1.2.2 Escorted personnel are the responsibility of the escort who is to ensure compliance of this procedure. *

1.2.3 Health and Safety Personnel conduct periodic inspections and surveys to assure that the requirements and objectives of the procedure are being met. Surveys will consist of personnel surveys after removing process clothing, spot surveys of process clothing, and smear surveys to assure that contamination is being properly controlled. Personnel decontamination, beyond washing with soap and water, will be performed by or under the supervision of a Health and Safety Technician if necessary.

1.3 Discussion

Facility change rooms are divided into two zones, restricted and unrestricted. Each operations and maintenance employee has a locker in each of the zones. A storage area is provided in the restricted area for administrative and supervisory personnel who wear lab coats. A buffer area has been setup between the two zones to allow initial personnel surveys to be conducted. This arrangement is designed to permit an easy change of clothing without spreading contamination from the restricted side to the unrestricted side. (See Attachment 1 for a layout of the change rooms.)

4.1.1 Employees working in contact with potentially contaminated tools or equipment must wear protective coveralls, hard hats, safety glasses, safety shoes and unierclothing provided by the company.

> ==NOTE==
>
> Laundry personnel are not required to wear the protective clothing and equipment specified in this procedure when working in the Laundry Room. Refer to Procedure HS-506 for protective clothing and equipment requirements when working in the Laundry Room.

4.1.2 Personnel not directly working in contact with potentially contaminated tools or equipment shall wear a smock over their street clothing, hard hats, safety shoes, shoe covers, and safety glasses or goggles.

> ==NOTE==
>
> Safety shoes are not required for occasional visitors or tour groups

4.1.3 All contractors working in contact with potentially contaminated tools or equipment shall wear coveralls, hard hats, shoe covers, and safety glasses or goggles.

4.1.4 If in doubt as to which requirements apply, contact a Health and Safety representative for direction.

4.2 Entering the Restricted Area

4.2.1 Employees as specified in 4.1.1:

a. Normally, enter through the front door of the Facility, leave lunch in the lunch room, and proceed to the unrestricted side of the change room.

b. Obtain protective clothing from the clean clothing hangers or shelves located on the "clean" side of the change room.

==NOTE==

In the women's locker room, the company supplied clean clothes are currently stored in the buffer zone.

c. Remove street clothes and shoes, place into your assigned clean-side locker, and put on protective clothing.

d. Put on clean shoe covers and move to the restricted side of the change room.

==NOTE==

Your I.D. badge must remain on your person at all times in the protected area.

e. Put on process shoes and place shoe covers in the locker provided. Put on hard hat, safety glasses, and film badge.

f. Pass your I.D. through the bar code reader and then enter the process area. If bar code reader is not functioning properly, notify the Senior Shift Supervisor before proceeding into the restricted area.

4.2.2 Employees, visitors, and others as specified in 4.1.2:

a. Normally, enter through the front door of the Facility, leave lunch in lunch room, pick up film badges; then, proceed to the unrestricted side of the change room.

==NOTE==

Visitors will normally be issued film badges at the South Guard House.

b. Put on clean shoe covers before entering the restricted side of the change room.

* Revised

c. Put on smock, hard hat, and safety glasses.

d. Pass your I.D. through the bar code reader and then enter the process area. If bar code reader is not functioning properly, notify the Senior Shift Supervisor before proceeding into the restricted area.

4.2.3 Contractors as specified in 4.1.3 follow the procedure outlined in 4.2.2 except substitute coveralls in step c. for smock.

4.3 Exiting the Restricted Area

4.3.1 Employees and others as specified in 4.1.1:

==NOTE==

Equipment, tools, or other items which are being removed from the restricted area and which have not been worn or carried continuously by the individual while in the restricted area must be surveyed and released by a Health and Safety Technician prior to removal from the restricted area. Items that may have come in contact with contamination (i.e. tools used to repair a system) must be surveyed by a Health and Safety Technician.

a. Operations and maintenance personnel entering the hallway leading to the men or women's change room shall pass their I.D. through the bar code reader and return their film badge to the film badge rack.

b. Enter the restricted side of the change room from the Process Area and remove protective clothing. Place used clothing in used protective clothing hampers provided. Remove and store process shoes. Put on shoe covers stored in locker.

==NOTE==

If visible evidence of contamination is noticed on protective clothing, place in a plastic liner and mark or label the bag as contaminated. Plastic bags should be available next to the protective clothing hangers.

* Revised

==NOTE==

Proper procedure for use of the step-off-pad is to remove shoe cover, step onto the step-off-pad, remove the other shoe cover from the other foot and proceed across the step-off-pad.

c. Remove shoe covers one at a time before using the "step off pad". After removal, place shoe cover in the used (labeled "dirty") shoe cover hamper and proceed into the buffer area of the change room. (See layout of change rooms, Attachment 1)

==NOTE==

Monitoring method and Requirements shall be posted at the entrance to the Unrestricted Area of the change room.

d. Using a frisker, monitor yourself and all hand carried items and protective equipment. Listen for an audible indication of contamination. If activity is indicated (increased rate), hold the frisker over the area for 5-10 seconds. If frisker alarms, attempt to decontaminate with soap and water. If unsuccessful, call a Health and Safety Technician for assistance.

==NOTE==

The number for Health and Safety is posted by the change room phone.

e. Wash hands and leave the buffer zone. Do not cross into the unrestricted side of the change room until after monitoring is completed.

* Revised

==NOTE==

At the end of the work day or shift, personnel who have worn protective coveralls shall take a thorough shower prior to putting on street clothing.

* f. Place underwear and socks in the hamper and proceed to showers and/or locker to put on street clothes.

g. Prior to exiting the unrestricted area, monitor using the PCM-1B located at the door. If the * PCM-1B is out of service, use frisker provided at the door.

*

==NOTE==

Instructions for use are posted next to the PCM-1B.

==NOTE==

If monitor alarms and contamination which cannot be removed by washing is confirmed by another survey, call a Health and Safety Technician for assistance.

==NOTE==

If a frisker appears not to be working properly, do not leave the change room without receiving a proper contamination survey. Notify Health and Safety for a survey before leaving the change room.

* 4.3.2 Personnel specified in 4.1.2 and 4.1.3:

==NOTE==

Equipment, tools, or other items which are being removed from the restricted area and which have not been worn or carried continuously by the individual while in the restricted area must be surveyed and released by a Health and Safety Technician prior to removal from the restricted area. Items that may have come in contact with contamination (i.e. tools used to repair a system) must be surveyed by a Health and Safety Technician.

a. Enter the restricted side of the change room from the Process Area, pass I.D. through the bar code reader.

* b. Hang lab coat or place lab coat or coveralls in used protective clothing hamper as appropriate. Return hard hats to the appropriate shelf.

==NOTE==

If visible evidence of contamination is noticed on protective clothing, place in a plastic liner and label or mark as contaminated.

==NOTE==

Proper procedure for use of the step-off-pad is to remove shoe cover, step onto the step-off-pad, remove the other shoe cover from the other foot and proceed across the step-off-pad.

c. Remove shoe covers, one at a time, using the "step-off-pad" to stand on. Place shoe cover in used protective clothing hamper and proceed into the buffer area of the change room. (See layout of the change room, Attachment 1)

==NOTE==

Monitoring Requirements shall be posted at the entrance to the Unrestricted Area of the change room.

d. Using a frisker, monitor yourself and all hand carried items and protective equipment. Listen for an audible indication of contamination. If activity is indicated (increased rate), hold the frisker over the area for 5-10 seconds. If frisker alarms, attempt to decontaminate with soap and water. If unsuccessful, call a Health and Safety Technician for assistance.

e. Wash hands and leave the buffer zone. Do not cross into the unrestricted side of the change room until after monitoring is completed.

==NOTE==

At the end of the work day or shift, personnel who have worn protective coveralls shall take a thorough shower prior to putting on street clothing.

f. Proceed to the PCM-1B and monitor prior to leaving the unrestricted area. If the PCM-1B is out of service, use the frisker provided at the door.

==NOTE==

Instructions for use are posted at the PCM-1B.

==NOTE==

If monitor alarms and contamination which cannot be removed by washing is confirmed by another survey, call a Health and Safety Technician for assistance.

* Revised

==NOTE==

If a frisker appears not to be working properly, do not leave the change room without receiving a proper contamination survey. Notify Health and Safety for a survey before leaving the change room.

g. Return film badge to the film badge rack (visitors return badges to security).

4.4 Personnel Decontamination

If contamination which cannot be removed by washing again is confirmed during an exit frisk, immediately call a Health and Safety Technician. The Health and Safety Technician will determine whether the contamination is on clothes, shoes or skin. The Manager, Health and Safety, must authorize contaminated personnel to leave the change room. On off-shifts, this authorization may be made by phone.

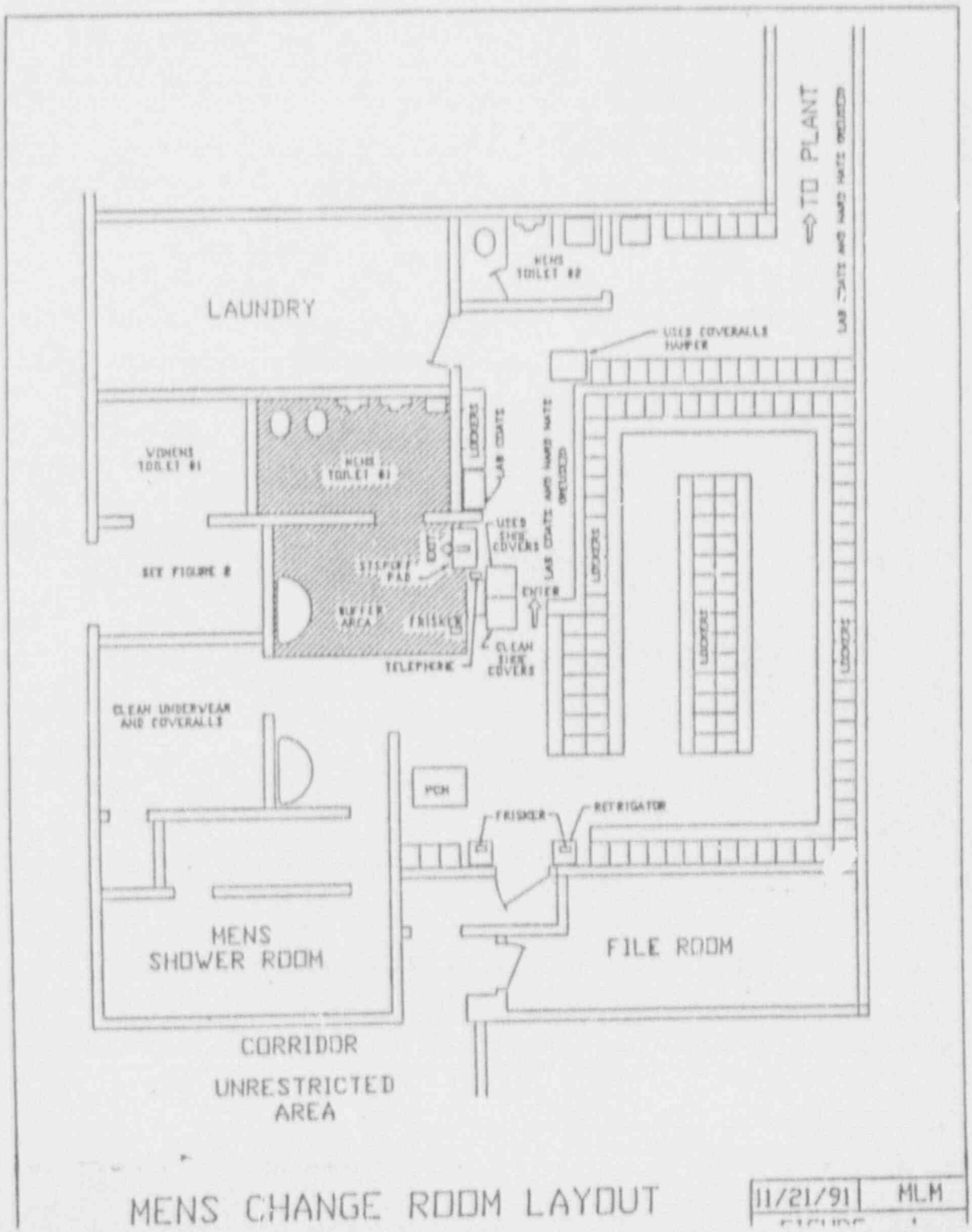
4.4.1 Contaminated clothing or shoes will have to be retained, and attempts will be made to decontaminate them to releasable levels.

4.4.2 If skin is found to be contaminated, decontamination should proceed, under the supervision of a Health and Safety Technician.

* Revised

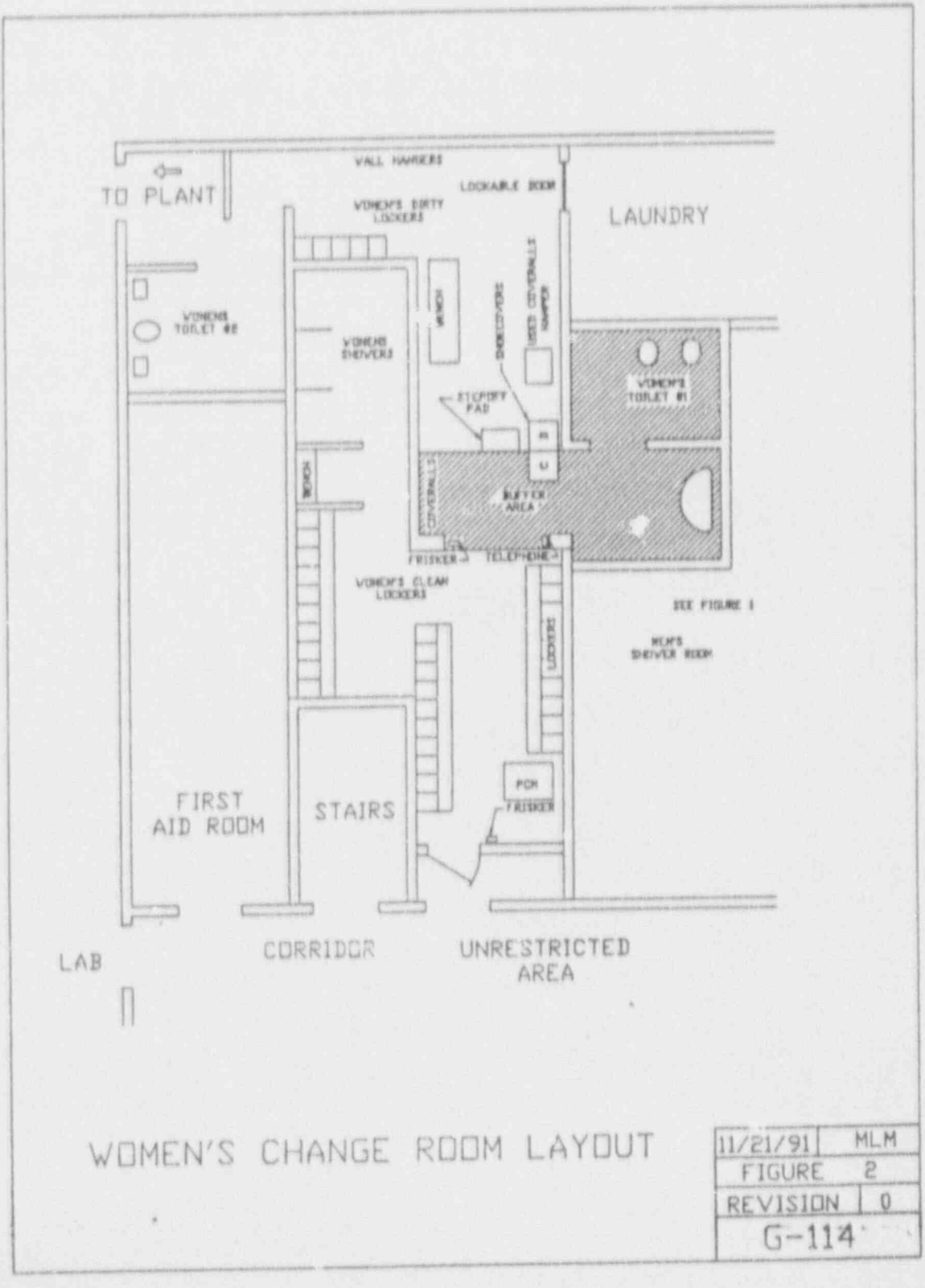
ATTACHMENT 1
Page 1 of 2

MEN'S CHANGE ROOM LAYOUT



ATTACHMENT 1
Page 2 of 2

WOMEN'S CHANGE ROOM LAYOUT



WOMEN'S CHANGE ROOM LAYOUT

11/21/91	MLM
FIGURE	2
REVISION	0
G-114	

REVIEWED AND APPROVED BY:

Manager, Engineering _____

Manager, Laboratory _____

Manager, Maintenance _____

Manager, Operations _____

Manager, Health & Safety _____

Manager, Environmental _____

Manager, Waste Management _____

PORC Chairman/ Manager, Procedures & Training _____ 1-6-92 Date

APPROVED BY:

Senior Vice President _____ 1-15-92 Date

This procedure is effective 01/17/92.

TRAINING/IMPLEMENTATION TABLE

The following implementation action is required:

Department	Action Level				
	0	1	2	3	4
Engineering		✓			
Laboratory		✓		✓	
Maintenance		✓		✓	
Operations		✓			
Health & Safety		✓			
Security		✓			
Administration		✓			
Environmental		✓			
Waste Management		✓			
Other CONTRACTORS				✓ CRA & CHEP BADGED ONLY	

UNSCEAR 1988 estimate. These estimates apply specifically to acute doses between 50 and 600 rems and to the Japanese population specifically. However, the risk estimates for a U.S. population exposed to acute doses of 25 rems should not be greatly different from the UNSCEAR or BEIR risk estimates. Therefore, the risk of cancer death for an average person exposed to 25 rems is considered to be in the range of about 0.01 to 0.03 per person exposed.

For genetic effects, UNSCEAR 1988 estimated 1.2 effects in all successive generations per 10^4 person-rem received before or during the reproductive period. Therefore, the average risk of a radiation-induced genetic disorder in a descendent of an average person exposed to a 25-rem dose is estimated to be about 0.003.

A 300-rem dose to the thyroid from radioactive iodines is not believed to have any acute effects. Hypothyroidism from radioiodines is considered to have a threshold of 1000 rems (Abrahamson, 1989). The likelihood of death from thyroid cancer is estimated to be in the vicinity of 0.002 (Abrahamson, 1989); in addition, some nonmalignant thyroid nodules could be caused. Based on the available evidence, a 300-rem thyroid dose is considered to have less risk than a whole body dose of 25 rems.

While a whole body dose of 25 rems or a thyroid dose of 300 rems have a potential for significant long-term effects, they do not produce significant nonstochastic (deterministic) effects.

3. Chemical Toxicity of Uranium Hexafluoride and Its Products

When uranium hexafluoride is released in air, it reacts rapidly with water vapor and forms uranium oxyfluoride and hydrogen fluoride:

$$UF_6 + 2H_2O = UO_2F_2 + 4HF + \text{heat}$$

The reaction occurs very rapidly. The chemical reaction releases heat, which may make a plume of these chemical products buoyant and cause it to rise. The chemicals formed by the reaction have three toxic effects: (1) the uranium in the uranyl complex acts as a heavy-metal poison that can affect the kidneys; (2) the hydrogen fluoride is an acid that can cause acid burns on the skin or lungs if it is concentrated; and (3) the fluorides (uranium oxyfluoride and hydrogen fluoride) can cause fluoride poisoning if intakes are large. Each of these effects will be discussed separately below.

One kilogram of UF_6 contains 0.68 kg of uranium and 0.32 kg of fluoride ions. The reaction with water in the air produces 0.23 kg of HF, as shown in Table 1.

Table 1. Relative Weights of Uranium Hexafluoride and Its Products

Uranium hexafluoride	1.00
Uranium	0.68
HF	0.23
Fluoride ions	0.32

3.1 Uranium Toxicity

The most important toxic effect of uranium is damage to the kidneys. High doses of uranium cause tissue damage in the kidneys, leading to functional loss as indicated by failure to resorb urinary protein, glucose, catalase, phosphate, citrate, and creatinine. High doses of uranium also affect the blood vasculature throughout the body. Capillary permeability, blood pressure, and edema may increase, and clotting ability may decrease. Uranium may damage capillary membranes, and it is also known to induce some damage to liver and muscle tissue. Its effects on the nervous system may be similar to those from poisoning by other heavy metals (Fisher 1988).

The toxic effects of uranium were reviewed by a panel of four prominent uranium toxicologists in 1984 (Just, 1984, and Just and Emler, 1984). The toxicologists were Dr. John B. Hursh, Dr. Leonard J. Leach, Dr. Paul E. Morrow, all from the University of Rochester, and Dr. McDonald E. Wrenn from the University of Utah. The panel arrived at a consensus on the toxic effects of uranium. The results presented in Just and Emler are shown in Table 2. In addition, the toxic effects of uranium were reviewed at a meeting sponsored by the NRC in December 1985 (Kathren, 1988). The information by Kathren is consistent with that presented by Just and Emler.

A word of explanation is necessary to explain the meanings of the row labeled "Threshold for transient renal injury or effect" and the row labeled "No effect." The "No effect" row gives levels of uranium at which the expert panel was confident that there would be no observable effects of any type. The row labeled "Threshold for transient renal injury or effect" is the panel's estimate of the level at which effects start to be observed.

The renal injury or effect threshold of 0.058 mg-U/kg is the level at which one or more of the chemical components of the urine indicates that there has been some change to some structure within the kidney. The chemical changes at the threshold level have been found to be transient, with the chemical composition of the urine soon returning to normal. Microscopic examination of the kidney would detect no damage several weeks after the exposure.

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Table 2. Health Effects from Intake of Soluble Uranium

Health effect	Uranium per kg body wt (mg-U/kg)*	Uranium (mg) in 70 kg person	Uranium intake (mg) by 70 kg person**
50% lethality	1.63	114	230
Threshold for permanent renal damage	0.3***	21	40
Threshold for transient renal injury or effect	0.058	4.06	8.3
No effect	0.03	2.1	4.3

*Based on Just and Emler, 1984, except where noted. The number of significant figures result from averaging and do not imply that much precision.
**Intake is defined as the total amount of material inhaled into the body. It includes material immediately exhaled in addition to material absorbed by the body. For 1-micron uranium particles in soluble form, about 49% of the intake will be excreted through the kidneys according to ICRP 30 models (Lessard, 1987, page B-163).
***Based on the conclusions of Wrenn in Just, 1984.

At the transient renal injury threshold, the initial loss of reserve capacity, if any, would be small; and that loss would subsequently be reduced by repair. Thus, the long-term consequences to a person subjected to a single intake of uranium at the injury threshold should be minimal.

An intake above 8 or 9 mg produces evidence of transient effects but no evidence of long-term effects. If there are any long-term effects, the effects are too small to be detected.

NRC regulations (10 CFR 20.103(a)(2)) limit acute intakes of soluble uranium by workers on a weekly basis because of its chemical toxicity. The limit for weekly intake is 9.6 mg. This limit also applies to a single short-duration intake. NRC believes this intake would cause no harmful effects. The NRC limit was based on the ACGIH TLV (threshold limit values) of 0.2 mg/m^3 (ACGIH, 1986) inhaled for 40 hours at a breathing rate of 1.2 m^3/hr. Based on the above information, this level is still appropriate.

A recent NRC final rule on emergency preparedness for fuel cycle and other radioactive material licensees (54 FR 14051, April 7, 1989) selected 2 mg of soluble uranium as a potential intake by a person offsite for which emergency plans would have to be prepared. The 2-mg value was selected to be well below the threshold at which effects could be expected to be observed and to have a large margin of safety. Thus, the 2-mg value specified in the rule contains a larger safety margin than appropriate for the comparison in this report.

Of the panel of experts whose views are presented in Just and Emler, 1984, only Wrenn identified a level of uranium expected to cause permanent injury. That level was equivalent to a uranium intake of 40 mg. However, microscopic examinations of the kidneys of animals have not found evidence of long-term injury when the animals had been subjected to intakes equivalent to a 40-mg intake by a 70-kg human, nor have long-term biochemical function changes been detected.

Medical examinations of two workers involved in a uranium hexafluoride accident in 1944 revealed no physical findings attributable to uranium intake (Kathren, 1986). The workers were estimated to have had initial lung depositions of 40 to 50 mg of uranium (equivalent to total intakes of 80 to 100 mg of uranium). Thirty-eight years after the accident, no effects of the uranium were found. This suggests that accidental intakes of 80 to 100 mg can occur without significant long-term effects, and therefore suggests that the permanent damage threshold may be higher than the values in Table 2.

Similarly, Fisher et al. (1990) studied the effects of uranium on 31 workers involved in an accident in 1986. None of the workers has sustained any observable health effects from exposure to uranium. The highest intake was estimated at 24 mg, and eight of the intakes were in the range of 11 to 24 mg. These observed effects do not appear to support a threshold for transient effects as low as 8 mg as shown in Table 2.

The results of two cases of accidental exposure to large amounts of uranium that occurred in China were recently reported (SuLu, 1990). In one case, a worker was exposed to a cloud of UF_4 powder. UF_4 is generally considered a moderately soluble (Class W) compound. The total urinary excretion through day 1065 was calculated to be about 87 mg. Kidney function started to show abnormalities on day 78 following the accident. Kidney function gradually returned to normal during the course of a seven-year medical followup. The amount of soluble Class W 1-micron uranium particles that would have to be inhaled to produce a urinary excretion of 87 mg is about 600 mg (Lessard, 1987, page B-340). The reported health effects associated with the uranium urinary excretion of 87 mg are fairly consistent with those in Table 2.

although the lack of any observed permanent kidney damage suggests that permanent kidney damage may require more uranium intake than indicated in the table when uranium enters the kidneys gradually.

In the second Chinese case, a man was exposed through the skin to uranyl nitrate and uranium oxide. The uranium oxide would be relatively inert, but the uranyl nitrate would be highly soluble (Class D). Urinary excretion was 130 mg (equivalent to 260-mg intake by inhalation). The patient became ill and showed signs of kidney damage. The signs of kidney damage disappeared by one month after the accident. These results also suggest that the values in Table 2 for permanent kidney damage may be too low.

Based on the discussion above, it is concluded that the NRC's limit of 9.6 mg of soluble uranium for a single acute intake is an intake that would produce in humans either minimal or nondetectable effects, either short-term or long-term. Thus, an intake of soluble uranium of 9.6 mg, rounded off to 10 mg, is selected in this report as being comparable to a radiation exposure of 25 rems since neither of these exposure conditions have significant acute effects to the exposed individual.

3.2 Radiation Dose from Uranium

The quantity of uranium in soluble form and at various enrichments that must be inhaled to deliver an effective dose equivalent of 25 rems is shown in Table 3. The specific activities in Table 3 were calculated using the following equation (from 10 CFR Part 20, Appendix B, footnote 3).

$$SA = 0.4 + 0.38E + 0.0034E^2$$

where: SA = specific activity in microcuries/g, and

E = enrichment in percent uranium-235.

The effective dose equivalent in rems per gram of uranium intake was calculated by using a conversion factor of 2.535 rems per microcurie, calculated from the value of 6.85×10^{-7} Sv/Bq given in Eckerman (1988) for uranium-235, solubility Class D. The exact values for uranium-234 and uranium-238 are slightly different, but exact values would not affect the results.

Table 3 shows that, even for the highest enrichments, the uranium intake needed to produce a dose of 25 rems is well over 100 mg. This compares to an intake of 10 mg of uranium derived as the intake of soluble uranium that would not result in acute effects from chemical toxicity. Therefore, uranium intake for soluble uranium compounds will be limited on the basis of chemical toxicity rather than radiation dose, regardless of enrichment.

3.3 Hydrogen Fluoride Toxicity

Moderate exposures to hydrogen fluoride in air can cause smarting of the skin, respiratory irritation, irritation of the conjunctiva (the mucous membrane that lines the inner surface of the eyelids), and pronounced taste. Massive exposure to hydrogen fluoride in air can cause progressive destruction of the bronchial mucous membrane and swelling of lung tissue, which can be fatal.

The toxicity of hydrogen fluoride has been reviewed in *Industrial Hygiene and Toxicology* (Patty, 1962), in Just and Emler (1984), in "Criteria for a Recommended Standard—Occupational Exposure to Hydrogen Fluoride" (NIOSH, 1976), and in "Summary Review of Health Effects Associated with Hydrogen Fluoride and Related Compounds: Health Issue Assessment" (EPA, 1988).

The effects of inhalation of hydrogen fluoride as determined by experiments on animals are summarized in Table 4.

For many toxic substances, there would be concern about serious injuries at sublethal levels. However, in the case of acute exposures to hydrogen fluoride, if fatality from suffocation caused by edema (swelling) in the lungs does

Table 3. Intakes of Uranium of Various Enrichments To Produce 25-rem Effective Dose Equivalent

Uranium enrichment (% U-235)	Specific activity (μCi/g)	Effective dose equivalent per gram U (rem)	Intake to produce 25-rem effective dose equivalent (milligrams)
0.71	0.67	1.7	14,700
4	1.97	5.0	5,000
20	9.36	23.7	1,060
50	27.90	70.7	353
93	65.2	165.0	151

TELEPHONE CONVERSATION RECORD

INDIVIDUAL CALLING: Lance Hughes
Director, NACE

REGION IV CONTACT: Linda Kasner
Senior Radiation Specialist, RMIS

SUBJECT: NRC INSPECTION REPORT 40-8027/92-06

Mr. Hughes called to question whether the raffinate samples discussed in the subject inspection report had been analyzed yet, and requested whether he could be provided a copy of the test results. I informed him that we had not yet received the lab results, but expected to receive them within [illegible] weeks. Additionally, I noted that the sample data is normally submitted to the licensee's docket file and would be available through the PDR. However, due to the sensitive nature of the relationship between SFC and NACE, and the fact that NMSS is currently providing copies of Licensee documents directly to Diane Curran, I agreed to notify Lance when the report from Oak Ridge was received and to fax him a copy of the information submitted to the licensee's docket file.

Lance also raised questions about the 16 monitoring wells described in the subject inspection report. His questions were focused on the location of the wells and in particular, whether they were positioned outside SFC's property line. I reviewed the information with him and explained that the new wells only served to fill in voids in the ground water monitoring system established for SFC's property rather than providing information for water migration beyond the property line.

Note: The conversation was reviewed with Joe Callan and Johns Jaudon who agreed with the action noted above.

cc:
CL Cain
GM Vasquez

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Inspector Guidance

Group your findings into the following categories:

1. Program Strengths - These are items which significantly enhance the programs and generally are unique to the facility.

2. Program Weaknesses - These items are not based upon compliance with SFC's license nor are they explicitly required by the regulations. However, they are areas where the program is marginally acceptable.

3. Inspector Followup Items - These are items similar to what were open items. As the name indicates, your response to these items will be reviewed by the inspector during a future inspection.

4. Restart Items - These are items that must be addressed prior to facility restart. (Typically, these will be agreed upon by the team.)

e

Internal Tracking Only

From S. Hanson 10-4-91

Health Physics Improvement Program
September 9, 1991

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Air Sampling	1.a.	3	Stack monitoring of gaseous effluents at the facility will be evaluated by a stack sampling consultant and appropriate upgrades made to the facility monitoring systems to bring this program into conformance with current industrial standards.	Consultant has evaluated and performed independent sampling of the HF Offgas Scrubber Exhaust. Rotameters have been replaced on many of the sampling locations. Information has been compiled in preparation for the evaluation of the gaseous effluent monitoring systems at the facility.	09/20/91 - Evaluation and independent sampling of HF Offgas Scrubber. 10/15/91 - Upgrade of the HF Offgas Scrubber system. 06/01/92 - Evaluation and upgrade of stack sampling at the facility.
	1.b.	3	The air sampling program used to determine the exposure (MPC_HRS) received by facility employees will be reviewed to determine if the use of lapel samplers is adequate to provide coverage for all facility employees. Additional guidance in the procedure as to who and how many workers should be wearing lapel air samplers is needed.	Procedure changes have been initiated to indicate when air samplers should be worn and the appropriate worker to sampler ratio.	09/31/91 - Procedural changes should be completed to clearly describe when lapel air samplers are required and the appropriate worker to sampler ratio. 12/31/91 - Monitor effectiveness of coverage to confirm that adequate air sampling coverage is being provided for all jobs.
	1.c.	2	The need for a flow controller at the nearest resident air sampling location needs to be evaluated and installed if needed. If not a procedure change will required.	SFC has evaluated the need for a flow controller by contacting the manufacturer of the sampling devise. The manufacturer informed SFC that they cannot install a controller on the sampling device. They indicated that the motor is designed to run at a constant rate. A chart records changes in the flow rate. Appropriate adjustments are made in the volume calculation and are reflected in the determination of airborne concentration.	10/15/91 - Procedure will be revised to reflect the actual sampling equipment installed and used.
	1.d.	5	Radon samples will be collected at several locations throughout the facility.	Track-etch radon detectors have been ordered.	The first monitors will be installed on October 1, 1991. Samples will be collected quarterly for a period of one year. Results will be evaluated following each quarterly report.

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Health Physics Improvement Program
September 9, 1991

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Air Sampling	1.e.	3	Air sampling system calibration program improvements to include a review of all aspects of the program from procedure, documentation of results, calibration devices, and routine maintenance.	Some improvements have been made such as evaluation of lapel air sampler performance.	
	1.f.	1	A program needs to be established to prevent the use of expired Drager tubes.		
	1.g.	3	Fixed air sampling equipment needs evaluation annually to confirm that the samples obtained are representative.	Lapel air samplers are used to determine airborne concentrations to which workers are exposed. Fixed air sampling continues to be used at the facility as an indicator of general area air concentrations and equipment failures.	Changes have already been made.
	1.h.	3	Concern that cross contamination of samples may occur when fixed air sample filters are stacked on top of one another when collected.		
ALARA	2.a.	5	Set up a program which will track/trend doses, emissions, incidents and survey results.	Film badge results are now being received on computer disk. Spread sheet programs are being developed.	
	2.b.	5	Evaluate highest external exposures to determine if these exposures can be reduced.	Engineering is currently working on filter canister rebuilding improvements which include the flushing of filters to reduce the exposure rates significantly. A facility dedicated to this use is being considered.	
	2.c.	5	Track and document the status of ALARA goals.		
	2.d.	3	Construct a new laundry facility which will provide more efficient cleaning and handling of contaminated protective clothing.	Plans for the new laundry facility are complete. Bid package is being prepared and is scheduled to be sent out during September.	

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
ALARA	2.e.	5	Install a mist eliminator to provide increased particulate removal efficiency following the HF Offgas Scrubber.	The equipment and materials needed to install the mist eliminator have been ordered and the unit is scheduled for installation at the end of September.	10/15/91
	2.f.	5	Install a continuous ash grinding/removal system in the UF6 filter/ash removal area.	New equipment has been installed on a cleanup reactor to evaluate the continuous ash removal system.	
	2.g.	5	Install a vacuum removal system to provide a more efficient method for removal of uranium concentrates from drums.		
Bioassay / Invivo Counting	3.a.	3	An action level needs to be established for the invivo lung counting results.		
	3.b.	3	Develop and implement a program for the on-site collection of bioassay samples.	A new bioassay program has been implemented which provides for the collection of bioassay samples on-site.	Item completed on 07/15/91.
	3.c.	3	An initial estimate should be performed after an intake to estimate what the potential exposure has been - for reportablility purposes.		
	3.d.	3	Determine exposures for employees entering the ash receiver area.	Exposures in the ash receiver area are monitored through the use of film badges, TLD ring badges and pocket dosimeters. Lapel samplers are also assigned to anyone working inside the ash receiver enclosure.	Completed.
	3.e.	3	An investigation should be performed when an individuals bioassay result(s) exceed an action level and work restriction is required.		
	3.f.	3	SFC needs to justify the use of the modified ANSI N341 equation (1900 ug U/l per 2500		

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
: ›assay / Invivo Counting	3.f.		ug intake versus 1000 ug U/l per 2500 ug in ANSI equation). Justification needs to be performed and documented.		
	3.g.	1	Air samples collected outside of the redrum enclosure were being used to represent the airborne concentrations of workers inside the redrum enclosure.	Lapel air samplers are being used in this area for determinaion of airborne concentrations.	Complete.
	3.h.	3	Estimates of doses received by individual who had lost their film badges were not being performed.	Dose estimates are completed and filed for all lost film badges.	Complete.
	3.i.	5	Bioassay data was not filed with sample data.		
	3.j.	2	Quarterly assessment for nearest resident not obtained for the first three quarters of 1988.	A procedure was established to ensure that quarterly assessments will be performed each quarter.	Complete.
	3.k.	3	Concern about accuracy of lifetime accumulated dose, based on problems with assessment/verification of prior dose.		
	3.l.	3	Bioassay samples are not analyzed on a timely basis.	Urine samples are now collected and analyzed in a timely manner, in most cases within a few days of sample collection. Fecal samples are still not analyzed in a timely manner. SFC is searching for a different compan yto perform this analysis, so that results are received in a more timely basis. CEP has committed to provide analysis results for fecal samples within 10 days of receipt for routine samples and within 72 hours for special (emergency) samples.	Complete - Will use CEP for all future samples.
mination Control	4.a.	2	Contamination control at the waste handling facility will be evaluated and appropriate	Consultants have reviewed the operation, contamination control training has been held	10/30/91 - Procedure changes should be made and in place before this

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Contamination Control	4.a.		changes made to upgrade the existing program.	for operators in this area and procedure revisions are in the process of being made. Air sampling is being done in this area - the results indicate that the airborne concentrations are low.	date. 12/31/91 - air sample collection and ventilation changes made in the facility.
	4.b.	2	Contamination control in the decontamination room will be improved by preparing a procedure and incorporating appropriate contamination control requirements.	Consultant has reviewed operation and procedure and made recommendations which should be incorporated into the procedure. Responsibility for this operation has been recently transfered to a different department. The procedure was recently reviewed and changes approved through PORC on August 30, 1991, additional changes to incorporate additional consutlant recommendations is indicated.	11/15/91 - review consultant recommendations and incorporation of appropriate changes.
	4.c.	2	Contamination control improvements will be made in the maintenance shop area where a controlled area is set up for work on contaminated equipment.	This topic was covered specifically in the contamination control training sessions. In addtio, HWP's are prepared to cover these work activities.	
	4.d.	3	A procedure which describes the requirements for construction of tents and the establishment of contamination control areas for work where a significant contamination potential is present will be prepared.	A contamination control training program has been conducted which included a presentation of appropriate contamination control methods, tent construction with buffer zones and protective clothing requirements and use.	
	4.e.	3	Use of shoe covers in semi-controlled areas will be evaluated to determine if this practice can be discontinued.		
	4.f	2	Contamination control improvements in the laundry facility will be made to ensure adequate monitoring and control for laundry workers and improvement of the laundry	Procedure revisions have been initiated, contamination control training provided and increased awareness to contamination emphasized. Instructions have been posted	09/30/91 - Procedure changes through PORC and implemented into the laundry operation.

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Contamination Control	4.f		process to minimize contamination spread.	for the operation of the wash machines and dryer.	
	4.g.	3	Prepare a video which shows the proper method for donning and removal of protective clothing for use in training of personnel in contamination control.		
	4.h.	3	Prepare a procedure which describes acceptable methods for cleaning and housekeeping at the facility.		
	4.i.	2	Procedure HS-506 requires that laundry workers should wear gloves and protective clothing. The actual practice and procedure should agree.	The laundry procedure has been revised to clearly state what protective clothing is required for various tasks performed in the laundry facility.	
	4.j.	3	Laundry workers should be required to shower before leaving the facility.	This requirement will be incorporated into the laundry facility procedure.	
	4.k.	3	A provision should be made for monitoring of personnel in the in-plant reading room.	Personnel are currently required to wash their hands prior to entering the reading room. In addition, daily smear surveys are performed in this room to identify any spread of contamination. Spot hand surveys are done.	
	4.l.	3	Shoe cover stands are sometimes found to have been moved with the identification of clean and contaminated shoe covers not easily visible. Maintenance of the shoe cover stands and step-off pads is indicated.	The shift Health and Safety Technician will check the shoe cover stands during facility walkthroughs. The Manager, Health and Safety will also review this issue during the monthly health and safety inspection. A work order has been submitted to make new signs and more stands.	Complete
	4.m.	3	Evaluate the use of portal monitors in the change rooms. If appropriate replace the friskers currently provided.	Two vendor units have been used on a trial basis. After some maintenance and operational problems were overcome the second vendor	An AFR was prepared on August 30, 1991, to procure three units. Information for spare parts is being obtained

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Contamination Control	4.m.			unit appears to be performing well. SFC continues to use this unit and is in the process of obtaining approval for the purchase of three portal monitors.	from the vendor and will be added to the AFB.
	4.n.	3	Supplied air hoses and vacuum hoses were found to be contaminated and not controlled (e.g. cleaned or bagged).	Personnel have been instructed to clean after usage and surveys are performed prior to removal from a job with potential for high levels of contamination.	
	4.o.	3	Poor tent contruction and use for contamination control.		
	4.p.	3	A I&E Technician handled equipment in the restricted area with his bare hands. Many other examples of apparent poor contamination control practices were observed.	Contamination control training classes are being held to address this issue.	
	4.q.	3	Labelling not provided on contaminated tools or storage cabinates.		
	4.r.	3	Adequate contamination surveys not being performed to adequately represent the contamination present in an area.		
	4.s.	3	The fixed air sampler located in the laundry room is not representative of airborne concentrations to which laundry workers are exposed.	There are no fixed air samplers in the laundry room. From time to time a series of special samples are collected to evaluate air concentrations in the laundry room. Three fixed sampling heads are scheduled for installation in the new laundry facility.	
	4.t.	3	NRC Inspector concern that the DUF4 contamination control incident could occur 10 months after SFC's heightened awareness to contamination controls.		

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Decontamination	5.a.	2	Decontamination records must be retained and secured. A program needs to be established to determine which records need to be retained.	Decontamination records have been established and a person assigned with responsibility to maintain the records.	Complete.
General	6.a.	5	Update the visitor video to reflect current facility visitor requirements.	The video script has been rewritten and retaping of the video is in progress.	10/15/91
	6.b.	5	Provide posting for all areas where barriers are present to provide information concerning special precautions to individuals who approach and may enter the area.	In process of ordering and replacing the signs.	
	6.c.	5	Improved housekeeping in the safety equipment room is needed.	Facility personnel are being made aware of the importance of housekeeping and based on reports from NRC and SOT are doing a much better job in this area.	
	6.d.	3	First aid kits need to be inventoried if the seal is broken.		
	6.e.	3	Emergency equipment used during exercises needs to be inventoried and replaced in a timely manner following the drill or exercise.	A procedure change has been made to require the inventory and replacement of equipment within 24 hours of a drill or exercise.	Complete.
	6.f.	3	Monthly radiation safety inspection (with report) is required monthly by the Manager, Health and Safety.	Monthly health and safety inspections are performed by the Manager, Health and Safety. A Health and Safety Department procedure has been written and describes the content of this inspection.	Complete.
	6.g.	3	Respiratory Facility Equipment Inventory for 3/91, 4/91, 5/91 and 6/91. (QA Item 877)		
	6.h.	3	Weekly check by Manager, Health and Safety that routines are being performed. (QA Item 704)	The Manager, Health and Safety signs off on the routines - a signature block has been added to the bottom of the form.	

Health Physics Improvement Program
September 9, 199:

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
General	6.i.	5	Communication between the Manager, Health and Safety and Health Physics Supervisors needs improvement. (i.e. daily meetings)	Communications have improved. Weekly H&S Staff meetings are held, in addtion to weekly meetings with each Supervisor.	Complete.
	6.j.	3	Cummulative airborne releases need to be monitored.	These releases are tracked for comparison to the 30,000 uCi quarterly release limit.	Complete.
	6.k.	3	NRC concern that there is no mechanism present controlling access to AR doors or locks on the AR doors.	Positive control during AR changeouts is provided through a person watching the area or by mechanical means to control access or set off an alarm when unauthorized entry is attempted.	05/03/91
Instrumentation	7.a.	3	A general radiation survey instrument maintenance and calibration program upgrade is indicated.	A Health and Safety Technician has been assigned responsibility in this area. Currently evaluating the need for an Instrument Maintenance Technician to maintain and calibrate the radiation survey instrumentation and air sampling equipment.	
	7.b.	3	Air-proportional survey instruments stored in emergency kits should be placed into plastic bags with desiccant.	Desiccant is replaced as needed during the monthly inspections.	Complete.
	7.c.	3	Procedure requires quarterly calibration of RO-2 survey instruments, but practice was semi-annual.	Procedure has been revised to indicate semi-annual calibration for this instrument. The reference procedure used as a guide in preparing this procedure indicated quarterly calibration.	Complete.
	7.d.	3	Gilibrator, primary calibration device for air sampling equipment, was not on the calibration schedule and not mentioned in Procedure HS-402.	The Gilibrator has been incorporated into the calibration schedule.	
	7.e.	3	Radiation survey		

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Instrumentation	7.e.		instrumentation which was out of calibration was not tagged out.		
	7.f.	3	Velometer used to measure hood/stack flow rates not calibrated since 1980. This instrument needs to be routinely calibrated.	Velometers are now calibrated on a routine frequency as recommended by the manufacturer. Calibration requirement will be included on the computer tracking system for survey and sampling instrumentation.	Complete.
	7.g.	3	Monthly hood flow checks were not performed during April or May, 1989. Lucis Pitkin hoods not on monthly velocity check program. During March and April, 1989, six hoods were found to be at the wrong height based on the hood flow measurements.	Hood flow checks are performed monthly. Additional hoods and areas where velocity checks are required are performed. Proper hood height are now marked and verified/adjusted as required during the montly hood flow check.	Complete.
	7.h.	3	The high volume air sampler calibration kit should be included with on the schedule of instrumentation which is routinely calibrated.	The high volume air sampler calibration kit has been incorporated into the calibration schedule.	
	7.i.	3	The pulse generator was not calibrated at the frequency recommended by the manufacturer.	The pulse generator has been incorporated into the calibration schedule.	
Organization and Staffing	8.a.	3	Additional health physics staffing is needed to provide adequate personnel to respond to the increased demands placed upon the department.	Three new positions have been added: a Staff Health Physicist, a Health Physics Technician and an Industrial Safety Technician.	Positions have been approved and have been filled. The Staff Health Physicist will begin work on 09/30/91.
	8.b.	3	A Health Physics Consultant has been retained to assist with the implementation of corrective actions.	A consultant began work at the facility in July and will be at the facility for at least six months.	
	8.c.	3	Appears that contamination control training, as well as other efforts that SFC managers have previously taken had been ineffective to ensure that workers adhere to		

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Organization and Staffing	8.c.		established procedures. SFC is expected to implement the necessary management controls to ensure that SFC workers understand SFC's management expectations and adhere to approved procedures.		
Posting	9.a.	3	A "Caution - Radioactive Material" sign was found missing at the entrance to the DUF4 Facility entrance.	A "Caution - Radioactive Material" sign was replaced at the entrance to the DUF4 Facility. Posting around the facility is inspected monthly.	Completed.
	9.b.	3	The entrance to the contaminated equipment storage yard was inadequately posted.	The entrance to the contaminate equipment storage yard has been posted. Posting around the facility is inspected monthly.	Completed.
	9.c.	3	A "Caution - Airborne Radioactivity Area" sign was not posted on the entrance to the desmoke house. This was a repeat finding.	The desmoke house is currently posted as required. Monthly inspections of the posting is performed.	Completed.
	9.d.	3	The sign at the entrance to the boneyard is unreadable.	Signs are inspected monthly and those found to require replacement are replaced. Use of temporary sign with cardboard inserts are being discouraged due to weathering problems with these signs.	Completed.
	9.e.	3	A "Caution - Airborne Radioactivity Area" sign was folded over and not readable.	Monthly inspections of the posting is performed.	Completed.
	9.f.	3	The 2nd level AR enclosure was posted as both a "High Radiation Area" and a "Radiation Area." The "Radiation Area" sign should be removed.	The "Radiation Area" sign has been removed.	Complete.
	9.g.	3	Use permanent posting in clarifier area instead of temporary stands for the postings.	The signs have been placed on permanent posts.	Complete.
	9.h.	3	A program needs to be		

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Posting	9.h.		established for maintenance of postings provided throughout the facility.		
Procedures and Standards	10.a.	5	A Hazardous Work Permit (HWP) guidance document will be developed to assist the Health and Safety Technicians in providing appropriate and consistent protection requirements.	The HP consultant is developing this document.	09/15/91 - Target date for prepartion of a draft HWP guidance document. 10/15/91 - Target date for completion of guidance document. 10/31/91 - Target date for training of H & S Technicians in the use of the guidance document.
	10.b.	3	Revise the HWP procedure to provide a clear definition of responsibilities and contractor requirements to ensure adequate control and oversight.	HWP procedure has been revised to provide a clear definition of responsibilities.	Complete.
	10.c.	5	Develop a reference notebook which contains all standard approved forms used by the Health and Safety Department.		
	10.d.	3	Develop a plan and implement the new 10 CFR 20 requirements before January 1, 1993.	Henry Morton is developing recommendations for implementation of 10 CFR 20 and will include this as part of his assessment of the SFC health physics program.	
	10.e.	3	HWP's should be reviewed by senior radiation safety staff and this review documented.	HWP's written for jobs which have a significant potential for contamination of personnel or the work area now require the approval of a Health Physics Supervisor.	Complete - HWP procedure revised and became effective on August 1, 1991.
	10.f.	3	Departmental procedures should receive review and approval by one management level above the individual funtionally responsible for the procedure.	Procedure No. HSDEPT-001 has been revised to require that each Health and Safety Department procedure receive approval by the Manager, Health and Safety and the Vice President, Regulatory Affairs.	
	10.g.	3	Current procedure inventory forms were not being used for	Current forms are now being used in accordance with the	Complete.

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Procedures and Standards	10.g.		ambulance inventory.	procedure.	
	10.h.	3	Procedure HSD&PT-009 needs to be updated to reflect the current responsibilities and reporting requirement for the facility.	The procedure has been revised.	
	10.i.	3	The serious incident reporting system (Procedure G-190) was modified to include all occations on which unexpected hazards are discovered or an unusual situation is encountered that could lead to a safety or environmental problem.	Procedure has been changed.	Complete.
	10.j.	3	Consider development of means to track the status of HWP's.	An HWP issue log is maintained in the Plant Health and Safety Office.	Complete.
	10.k.	3	HSD&PT-112 needs revision to refer to Sealed Source Work Permit (SSWP) instead of HWP.	Procedure HSD&PT-112 was determined to not be needed and has been rescinded, therefor this change is no longer applicable.	
	10.l.	5	The table of contents for HSD&PT procedures needs revision number and date.	These additions have been made to the table of contents for the HSD&PT procedures.	Complete.
	10.m.	3	Procedures and work practices need to be revised pursuant to actual regulatory requirements or actual practices. (QA Items 891, 697, 711,714 and 716)		
	10.n.	3	Procedure G-190 should include initiation date and completion time for incident reports. (QA Item 833)	The completion time requirement has been incorporated into the procedure. A procedure change is needed to include the initiation date or time requirement for initiating an incident report.	Completion date/time is complete. Initiation requirement needs to be incorported into the procedure.
	10.o.	5	Root cause determinations should be included as part of each incident report.	Procedure changes have been made to determine the root cause on each incident report.	Complete.

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Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Procedures and Standards	10.p.	5	NRC concern that Health and Safety personnel do not feel a sense of ownership in the HWP process.	The Health and Safety Department is now the proponent of the HWP Procedure.	Complete.
Protective Clothing and Equipment	11.a.	5	The respiratory protection program will be evaluated and upgraded to current industrial standards.	Program upgrades have been identified. Some changes have been made. Major changes such as the change of fit testing frequency and training from the current three year frequancy to an annual frequecy will be made in 1992.	12/15/92
	11.b.	3	Failure to properly use respiratory protection equipment.		
	11.c.	3	The annual physical exam requirement for respitatory protection usage has not been met. A list of authorized users is posted in the Plant Health and Safety Office and reviewed prior to issuance of a respirator to ensure that each person received is qualified. (Has had a physical exam in the past year and been fit tested within three years) This list is posted monthly.	Database of authorized respirator users is maintained and qualified users list is posted.	Complete.
	11.d.	3	Two persons in the re-drum area of the sampling plant were no wearing respiratory protection.		
	11.e.	3	The Health and Safety Department should receive and review records documenting test/maintenance records of the breathing air system.	The records of air testing are maintained. A program should be devised to maintain copies of work orders on breathing air systems.	
	11.f.	3	Fixed air couplings are unprotected from contamination.		
	11.g.	3	Verify that the new supply air is free of condensed hydrocarbons.	Filtration devices are installed at both the compressor and at the point of connection/use.	Complete.

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Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Protective Clothing and	11.h.	3	Maintain records detailing respirator maintenance. (QA Item 841)		
	11.i.	3	When investigating leaks in the h2 area should the individuals use a full face respirator with an HF/particulate cartridge. (QA Item 805)	This item has been revised and a determination made that a full face respiator will particulate cartridge is adequate protection for the inspection only.	Complete.
	11.j.	5	Consider issuing a document emphasizing managements position on respiratory protection program. (Management Policy Statement)	A Management Pollicy Statement was issued on June 4, 1991.	Complete.
Radiation Surveys	12.a.	5	Personal radiation monitors (portal monitors) will be installed at the exits from the change rooms to provide improved monitoring of individuals leaving the restricted area.		
	12.b.	3	Adequate surveys should be performed to access the extent of radiation hazards present.	Special and monthly surveys are currenly conducted.	
	12.c.	5	Post clean-up surveys need to be documented.	Post clean-up surveys are now documented on the back of the weekly survey results.	Complete.
	12.d.	3	Daily smear surveys should be collected in the reading room and an action level established which is comparable to the lunch room.	Procedure changes have been made to require daily surveys in the reading room. An action level has also been established for the reading room at which cleanup is required.	Complete.
	12.e.	3	Document the cleanup which is performed within 72 hours of the weekly contamination surveys.	The cleanup and resurvey results are documented.	Complete.
	12.f.	3	Procedure HS-301 requires daily smear surveys of reading room. This is not being done on at daily basis for approximatelly 20 percent of	The results are now recorded and tracked daily for the reading room.	Complete.

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Radiation Surveys	12.f.		the results.		
	12.g.	3	Measured fixed and removable contamination levels should be recorded.		
	12.h.	3	Procedure HS-301 requires monthly beta/gamma surveys. Beta/gamma surveys were not performed during the months of May 1989 and January 1990.	Beta/gamma surveys and other surveys are tracked on the monthly routine sheets to ensure that they are performed at the scheduled frequency.	Complete.
	12.i.	3	Surveys of containers for shipment don't show whether results recorded were for alpha or beta/gamma.	New survey sheets are currently being used which include columns for recorded the alpha and beta/gamma results. The units are also included on the survey documentation.	Complete.
	12.j.	3	Concern that some of the monthly routine surveys (beta-gamma surveys) may need to be performed on a more frequent schedule.		
	12.k.	3	Concern that surveys made on equipment only if equipment is operating may not be adequate, extended period could pass with no survey.	Surveys are conducted on equipment - operating or not.	
	12.l.	3	Establish beta-gamma contamination limits for the restricted area.	License amendment submitted on 09/03/91.	
Reports and Records	13.a.	3	Decommissioning records were inadequate.		
	13.b.	3	Copies of 1910.20 (access to exposure records) should be readily available.		
	13.c.	3	Monthly flow rates checks for the months of September, October and November, 1989 indicated that problems were identified with certain ventilation locations - no documentation of corrective action was available.		

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Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Reports and Records	13.d.	3	Documentation of sound system test per Procedure G-157 was not followed for the month of August, 1989.		
	13.e.	3	Corrective actions on monthly communications tests were not being documented.		
	13.f.	3	Documentation of cleanup within 72 hours of cleanup is incomplete. Delays in reporting survey results to operations, dates when cleanup was performed and followup surveys were observed to be problems.		
	13.g.	3	Documentation showing that the air exchange rate in the process area is greater than 10 air changes per hour is unavailable.	This needs to be documented. The Engineering Department needs to be contacted to obtain plant air volume information. Flow rate information for the stacks and roof vent fans can be used to calculate the air exchange rates.	
	13.h.	3	Bioassay followup when samples which exceed the 20 ug U/l action level needs to be filed.	A memorandum is written to the file documenting that additional samples are requested.	Complete.
	13.i.	3	Two NRC violations received during September 1989 were not posted within two days as required.	Violations are now posted within two days of receipt.	Complete.
	13.j.	3	Radiation exposure reports, if requested, include only external exposures. The NRC regulations (10CFR19.13) requires internal and external records to be reported.	External and internal records are now reported to individual requesting their radiation exposure history.	complete.
	13.k.	3	Exposure histories requested by employees need to be reported on a timely basis.		
Training	15.a.	3	Contamination control training for facility employees is	Contamination control training classes were held for facility	9/15/91

Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Training	15.a.		needed and should describe the methods necessary to prevent the spread of contamination form work areas and the controlled areas.	personnel during June, 1991. Additional contamination control classes will be held during September for those personnel who were not available for the June classes.	
	15.b.	5	An annual radiation protection training program is needed for all facility employees.		
	15.c.	3	A health physics technician training program is needed to provide a good basic understanding of health physics concepts and radiation protection principles.	A training course began on July 15, 1991, and will run for at least eigth weeks. The course will include four hours of instruction time per week per technician.	10/01/91
	15.d.	3	Six contractor employees worked at the facility without receiving the contractor radiation safety training.	Current procedures require the training of contractors involved in certain work activities at the facility.	Complete.
	15.e.	3	Operations and maintenance personnel need additional training on the proper use of portable sampling equipment with an emphasis on the importance of representativeness.		
	15.f.	3	The emergency response team had difficulty donning rubber protective suits during a drill during 1988.		
	15.g.	3	Training provided to contractor personnel working in the restricted area is not adequately documented.		
	15.h.	3	SFC personnel appear to not have been adequately trained in proper contamination control and SFC management has not implemented effective procedural controls in this area.		
	15.i.	3	Lack of procedure training for	New laundry workers are now	

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Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Training	15.i.		new workers in the laundry facility.	trained and sign an acknowledgement statement prior to being permitted to work alone.	
	15.j.	3	A Mechanism needs to be established for procedural training of contractors working at the facility on a routine basis.		
Waste Processing	16.a.	3	A procedure for the drum crusher operation will be prepared and include contamiation control and protective clothing requirements.	The drum crusher procedure has been prepared and approved by PORC.	Complete.
	16.b.	3	Disposal of oil dry should be evaluated to determine if proper disposal methods are implemented.	Oil disposal method have been evaluated and the current practice found to be satisfactory.	Complete.
	16.c.	5	Document the methodology used for the uranium content determination used prior to the shipment of LLW.		
	16.d.	3	Failure to rountinely calibrate radiation survey instrumentation used for estimating the total activity of drums which are shipped for disposal to a LLW site. Routine calibration is needed.		
	16.e.	3	Items released for unrestricted release should be individually surveyed and the results documented demonstrating that each item has been individually surveyed.	This concern has been conveyed to the Health and Safety Technicians in writing.	Complete.
	16.f.	3	Procedure HS-301 requires that items released for unrestricted use have "cleared" stickers placed on them. Not all items have released have stickers on them.		

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Subprogram	Item	Priority	Description	Progress To Date	Estimated Completion
Waste Processing	16.g.	3	Containers with hazardous chemicals in them are not adequately labeled.		
	16.h.	3	Bulk chemical storage tanks have no warning signs placed on them.		

NRC FORM 218 (6-76) NRCM 0240

U.S. NUCLEAR REGULATORY COMMISSION

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE: 6/28/91

TIME: 1:40 ☐ A.M. ☒ P.M.

☒ INCOMING CALL ☐ OUTGOING CALL ☐ VISIT

PERSON CALLING	OFFICE/ADDRESS	PHONE NUMBER / EXTENSION
Lee Lacey	SFC	

PERSON CALLED	OFFICE/ADDRESS	PHONE NUMBER / EXTENSION
Finkes		

CONVERSATION

SUBJECT: Uic bromide well.

SUMMARY:

Old abandoned water well (~30' deep, much root growth, not purged) at house site north of reduction facility, was sampled (without purging) in April and again on May 1.

Results:

April – Gross α, ~~Gross β~~.
Possibly some ^{230}Th (??)
Gross α 27 ± 11 pCi/L (Action level = 15)
^{226}Ra 10 ± ? (" " = 3)

May – Gross α 17 ± 5
^{226}Ra 4.4 ± 1

Probably not groundwater. Upgradient from facility.
Will purge well and resample.
Calling because Mark V. asked to report ~~any~~ elevations found elsewhere.

REFERRED TO: Mark V.

☐ ADVISE ME OF ACTION TAKEN.

ACTION REQUESTED: None

INITIALS: [illegible]

DATE: 6/28/91

ACTION TAKEN

INITIALS

DATE: I-11

NRC FORM 218 (6-76)

INTERNAL CORRESPONDENCE

SEQUOYAH FUELS CORPORATION

TO: Norma Voss

DATE: May 17, 1991

FROM: Reau Graves, Jr.

SUBJECT: SFC Procedure Violations

Reau Graves Jr

NRC Inspection Report 91-03, which covered an inspection from February 25 to March 1, 1991, identified a number of issues which concern every Sequoyah Fuels employee. These issues include failure to follow procedures and failure to identify procedural deficiencies (even those readily identified by an outsider like the NRC with only a superficial knowledge of the process). These findings resulted in two violations.

Similar concerns have been frequently expressed by the NRC in the past few months. Until all Sequoyah Fuels employees become concerned about how we conduct our overall operation, including the adequacy of and compliance with procedures, the NRC will continue to find deficiencies each time they inspect SFC. Our continued failure to remedy these problems will be viewed by NRC as a need for continued close scrutiny.

Each employee is the expert, or one of a small group of experts, in some aspect of the facility operation. As such, each one of us has a significant opportunity to improve procedures and compliance with procedures in our areas of expertise. We must each make it a priority to thoroughly know the procedures that apply to our assigned jobs. Ask yourself questions like: Does this procedure really describe how I perform this task? Are there tasks routinely performed in my job which are not covered in a procedure? (i.e., Is the procedure adequate? If not, what steps are missing? Any changes needed must be developed through the proper channels.)

Some specific information from Inspection Report 91-03 is provided below, which details the NRC's concerns. Boldfacing has been added for emphasis. These NRC violations and concerns highlight the fact that SFC is obligated to follow our procedures very precisely and to have procedures that adequately describe the performance of a job.

FAILURE TO FOLLOW PROCEDURES

The NRC stated on page 5 of Inspection Report 91-03:

> "The review of the operation of the SX circuit indicated several **significant differences between the actual performance of an activity and the description of the activity as contained in the applicable procedures.**"

I-8

VIOLATION A

The first violation noted by the NRC was stated as follows:

> "Violation A described in the Notice resulted because some members of the operations staff (including some shift supervisors) appeared to be unaware that they were required to check the top bleeder on the No. 2 uranyl nitrate hexahydrate decanter every 2 hours. This is important given that Sequoyah Fuels Corporation (SFC) developed this procedural requirement to prevent explosive conditions. We acknowledge that others on your staff may feel that the 2-hour requirement is extremely conservative, but that does not deter from the fact that SFC is required to operate the facility in accordance with its own procedures."

Note that even if a procedure contains a requirement that may be considered excessive or unnecessary by some, it is binding on SFC to perform exactly according to the procedure. Otherwise, SFC may be found in violation. When unreasonable requirements are found in a procedure, the procedure can be modified if the procedure's proponent (responsible departmental manager) can be convinced that it needs to be changed. Until such requirements are changed, though, the procedure remains in effect exactly as written.

VIOLATION B

The second violation noted by the NRC was stated as follows:

> "Violation B described in the Notice indicates the failure of some members of the operations staff to be aware of a requirement to clean the solvent rework centrifuge every 24 hours. As a result, the inspector actually observed the centrifuge overflow, subsequently discharging uncontained process solutions onto the building floors and sumps. This is of concern given SFC's efforts to minimize process solutions on the floor in response to NRC's Order Modifying License, dated September 20, 1990."

On page 6 of Inspection Report 91-03, the NRC elaborates further:

> "Procedure N-240-2 states that the centrifuge 'requires cleaning approximately every 24 hours of normal operation, or more often when abnormal conditions warrant more frequent cleaning.'

> Discussions with operators indicated that the centrifuge is not routinely cleaned on a periodic frequency, but rather only when the operator determines the centrifuge needs cleaning. One of the symptoms used to determine when cleaning is necessary is overflow of the material in the centrifuge."

Use of a release or potentially harmful condition to determine the need for maintenance is an unacceptable practice, especially when the requirements of the Order Modifying License are considered.

FAILURE TO IDENTIFY PROCEDURAL DEFICIENCIES

On page 2 of the cover letter to Inspection Report 91-03, the NRC states:

> "From our small sample reviewed during this inspection, we are concerned that potentially significant deficiencies are still being identified by NRC. It appears that more aggressive periodic detailed reviews of routine operational activities to verify consistency between operator actions and written procedures should be performed by SFC."

The NRC inspectors generally have only superficial knowledge of SFC's operation. However, when NRC inspectors who lack in-depth knowledge of the process are consistently able to find procedural deficiencies, this raises a major concern to the NRC concerning SFC's competence and attention to detail. Both of these are required for an operation such as ours.

On page 8 of the inspection report, the NRC stated:

> "The procedure review and discussions with area operators identified several routine job activities which have not been incorporated into the procedures."

For example, they go on to note on page 8:

> "Operators stated that several times per shift, the packing on denitrators and the concentrate transfer system which feeds to the digestion circuit is checked to assure that the packing is not loose enough to allow the release of process materials. Loose packing had resulted in the release of UO_3 from a denitrator in late November 1990. Discussions with site personnel at that time indicated that the packings would be checked at lease once per shift as

> a corrective action to minimize the possibility of future releases. As stated previously, these checks were being performed by the operators, but the checks have not been incorporated into the corresponding procedures. This issue will be reviewed during future inspections."

In this case, a corrective action commitment was made to the NRC, but action was not sufficient to ensure that the new checks would actually be performed for the long-term.

SFC's future success, and even its survival, depends on all of us making a sincere commitment to improving our performance. If we are to be successful, we will all have to work together to meet NRC's higher level of expectations for SFC's performance. If you are willing to make such a commitment, as I'm sure most of you are, we can meet NRC's expectations. Likewise, for those few who can't or won't change, you are holding the rest of us back.

To underline the importance of this issue, I want you to sign the attached acknowledgement form and return it to your supervisor, who will then forward it to Loretta Bloomer.

xc: Sequoyah Oversight Team

ACKNOWLEDGEMENT

I have read Reau Graves' memo of May 17, 1991, and understand it. I further understand that the Company holds me personally accountable for having a working knowledge and understanding of the written procedures I am responsible for. I am required to follow such procedures at all times. If there is a problem with a procedure, it is my responsibility to bring it to the attention of my supervisor immediately and/or to initiate appropriate steps to correct the procedure.

_____ _____

Signature Date

NRC: 3001
5/8

Wes -

5 min being interviewed by P/C
(~~man~~)

will split Bentley

CR Pam / SFC

7:00 Bogardus will meet

@ ~~urine~~
blood

Samples 5/2 a.m.

Rec'd in SFC lab 5/?

Anal by " 5/?

I-4

Carl Couch, Scott Munson, Wat. 5/... ~8:15...

Reruns

8.1, <5, <5 μg/l

Dr. Bogardus did full exam
urinalysis
blood serum

Mr. Roberts (RSA) & Dr. B. interviewed

split samp.
N. Pembroke (not CR) & SFC)

SFC will interview when their investigator...

Sample bottles picked up 5/2 a.m.
Voided 5/2 a.m.
2 were left in truck
1 was in RSA trailer
Turned in to SFC per... 5/2

HP Tech picked up Monday (5/6)
Lab analyzed Tues. (5/7)

I-5

5/9
~11:00

Scott Pennington —

EDC questions re SFC exposures. Concerned that, because of rapid excretion of I, the Wednesday (5/7) results might not be proof that the Thursday (5/2) results were not real exposures.

I-6

STATUS: ALL

FROM: 03/16/91 TO: 05/16/91

LOG NUMBER	SUBMITTOR CODE	VEND CODE	REPORT DATE	ACCESSION NUMBER	EMPLOYEE NAME	ORGANIZATION ABBR	REPORT DUE DATE	EXTNSN DUE DATE	CLOSEOUT DATE	CLOSEOUT CODES
91-013	SFC	WA01	03/21/91		ASGN: VASQUEZ		05/31/91		05/09/91	LISU
					INF: FISHER					VASU
					INF: MACDONALD	NMSS/SGTB				
					INF: HAUGHNEY	NMSS/IMSB				
					INF: BIDINGER	NMSS/IMOF				
					INF: HICKEY	NMSS/IMOB				
					ADV: RAJENDRAN					
					ADV: RAMSEY	NMSS/IMOBS				

DESCRIPTION: MODEL 48X (UF6) CYLINDERS WITH LESS THAN MINIMUM HEAD THICKNESS IN A LETTER TO ROBERT BERNERO, DIRECTOR NMSS, LEE LACEY REPORTED THAT THEIR MODEL 48X URANIUM HEXAFLUORIDE CYLINDERS DID NOT COMPLY WITH A REQUIREMENT FOR A MINIMUM HEAD THICKNESS OF 0 625 INCHES BECAUSE THEY WERE ORIGINALLY MANUFACTURED WITH A NOMINAL 0 625 INCH HEAD THICKNESS. W H STEWART COMPANY (THE CYLINDER MANUFACTURER) NOTIFIED THE LICENSEE THAT DOT HAD GRANTED THEM AN EXEMPTION FOR THEIR MODEL 48Y CYLINDERS BECAUSE ANSI N14 1 WAS REVISED IN 1987 TO REQUIRE MINIMUM INSTEAD OF NOMINAL HEAD THICKNESSES. THE LICENSEE PROPOSED TO USE THE EXEMPTION FOR THEIR MODEL 48X CYLINDERS. IN A LETTER DATED APRIL 5, 1991, CHARLES MACDONALD (SGTB) INFORMED MR. LACEY THAT THEIR PROPOSED CORRECTIVE ACTION WAS NOT ACCEPTABLE BECAUSE THE DOT EXEMPTION ONLY APPLIED TO MODEL 48Y CYLINDERS. MR. LACEY INDICATED THAT HE WOULD CONTACT THE MANUFACTURER ABOUT OBTAINING AN EXEMPTION FOR THEIR MODEL 48X CYLINDERS AS WELL. IN A LETTER TO BILL BEACH (REGION IV) DATED APRIL 3, 1991, LEE LACEY NOTIFIED R-IV THAT THEY HAD SHIPPED SEVERAL UF6 CYLINDERS WITHOUT COMPLYING WITH THE CONDITIONS OF THE DOT EXEMPTION. REGION IV PLACED INSPECTORS ONSITE TO MONITOR LICENSEE OPERATIONS AND WILL FOLLOWUP ON THIS AND OTHER ISSUES. ON MAY 1, 1991, SGTB RECEIVED A COPY OF A REVISED DOT EXEMPTION (DOT-E 10460). ON MAY 9, 1991, C. MACDONALD ISSUED A LETTER TO MR. LACEY ADVISING HIM THAT THE REVISFD EXEMPTION NOW INCLUDED MODEL 48X CYLINDERS AND THE LICENSEE'S CORRECTIVE ACTIONS WERE ACCEPTABLE.

H-7

Lee, Ivie, Scott, Carol 9:10 a.m.
5/8/91

3 RSC contract, 2nd
Routine U/I wine samples

Arr
#1 32,500 ug/l
#2 18,100 "
#3 39,200 "

working w/ RSC
Splitting at least w/ Pembroke (Florida)
Consulting w/ Dr. Bogardus

Full investigation
Early indication re credibility of samples.

20.403 — Threatens to spread 5-yr

Supv & tech working with them showed nothing unusual.

Historical data ~ ≤ 5 ug/l.

I-3

Emp was exposed to sampling vault area

Vilsack

Carol Thimba '86 accident - hospital
~ 5000 mg/L

NRC FORM 218 (4-76) NRCM 0240

U.S. NUCLEAR REGULATORY COMMISSION

TELEPHONE OR VERBAL CONVERSATION RECORD

DATE 5/8/91

TIME ~9:00? ☒ A.M. ☐ P.M.

☒ INCOMING CALL ☐ OUTGOING CALL ☐ VISIT

PERSON CALLING	OFFICE/ADDRESS	PHONE NUMBER / EXTENSION
Lee Larry + Tad (Penna Assoc)		
PERSON CALLED	**OFFICE/ADDRESS**	**PHONE NUMBER / EXTENSION**
Fisher		

CONVERSATION

SUBJECT Roberts/Schornick urinalyses

SUMMARY Urinalyses yesterday on 3 Roberts/Schornick people showed 18,000–39,000 ng/L. Will report as a 20.403 (potentially >5 rem), because at this point they have no evidence that exposures are not real. However, there is no reason yet to believe that exposures are real. Full investigation under way. The three people are being resampled today in Norman or OKC. Dr. Boarding to determine them today.

Wes Hilley is at site.

I notified Merri Horn.

REFERRED TO: Mike V. Bill B., Larry L

☐ ADVISE ME OF ACTION TAKEN.

ACTION REQUESTED

INITIALS

DATE 5/8/91

ACTION TAKEN

At 11:50 a.m., 5/8/91, Joe Bohannon called to say they had reported to NRC as 20.403 and would fax to me.

INITIALS

DATE 5/8

NRC FORM 218 (4-76)

ABB
LAY
RAL

Record of Conversation
June 20, 1991

Subject: Elevated Soil Contamination Outside SFC's Restricted Area

Person Receiving Call: D. Michael [illegible] DM

SFC's QA engineer called me today to inform me that they have recently been informed of contamination levels in surface soils, above SFC's action level, outside the restricted area. SFC split samples with an NRC inspector from URFO on June [illegible], 1991, and two have been found above SFC's action level of [illegible] picocuries of uranium per gram of soil (pCi/gm). The first soil sample was taken 200 feet west of [illegible] stream bed and indicated 49 pCi/gm. This same location, or one very similar, indicated [illegible] pCi/gm in 1985.

The second location was at the confluence of [illegible] and the headwaters for the Illinois River (in the Corps of Engineer's right of way, on the banks of the river - [illegible] with GRK). This second value measured 120 pCi/gm[illegible].

The QA engineer told me that they (SFC) was still evaluating the situation, but that the information was documented in a memo from the Manager, Environmental, to the Vice President, Regulatory Affairs, dated yesterday. I asked the QA engineer to inform the NRC inspector from URFO (GRK), since he was performing an inspection at SFC this week, and be sure he was aware of this information and any corrective actions SFC plans to take.

I then immediately called the Project Manager for SFC, in NMSS, and informed her of this. She was not surprised of these results because, in 1985, NRC was aware of the fact that some reconcentration had occurred in this streambed. My call seemed to be timely because they were preparing to brief a member of Congressman Synar's staff tomorrow.

I-10

8:15a.
5/8/91

Wes
?
Rotten:

3 of Schormick people - Urine submitted yesterday (>34,000 ug/l)

Had been collecting samples in hexane tank vault.

No reason to transmit.

Has discussed w/ State, Hammontree Couch.

Getting Dr. Bogardus involved.

Asked Schormick to take more samples.

I-1

Region IV
Items of Interest
February 28, 1992

1. On February 24, 1992, a representative of Sequoyah Fuels Corporation (SFC), a subsidiary of General Atomics, located in Gore, Oklahoma, notified NRC Region IV that a personnel contamination incident had occurred on evening of Saturday, February 22, 1992. The licensee noted that it did not consider the incident reportable under the criteria of 10 CFR Parts 20 and 40.

   As reported to NRC, the incident involved an operator who was working in the plant Solvent Extraction building when he was inadvertently sprayed on the forearm and leg with acidic, uranium-bearing process fluids. SFC staff on duty at the time determined that professional medical attention was not warranted and proceeded to implement personnel decontamination procedures. The operator's skin was successfully decontaminated with exception of a small area of his hand. The health and safety supervisor on duty at the time directed the operator to wear a rubber glove over the affected hand until the operator reported for duty the following day, in order to allow perspiration to bring the remaining contamination to the skin surface. This effort was successful in removing the contamination as was confirmed by repeat surveys the following day.

   Region IV staff inquired and was provided additional information on February 26, 1992, subsequent to the licensee's review of the event. Licensee staff acknowledged that the work conducted on the evening of February 22 involved a transfer of highly acidic (an equivalent 1.2 molar nitric acid solution) uranium-bearing fluids between two process vessels, via a temporary hose connection. A visual inspection had failed to detect deterioration of a gasket in the hose coupling and the operator, working nearby, was subsequently sprayed. The licensee identified one violation of site procedures in that the Manager, Health and Safety, was not immediately notified of the event. Additionally, the licensee identified a deficiency in the applicable procedure in that it did not require that SFC's occupational health nurse be consulted in determining whether medical attention was warranted. The licensee is currently revising the applicable procedure to include this requirement, and providing additional training to its health and safety staff regarding proper notification to the department manager.

cc:
J. Blaha (via 5520)

(69)

OPERATIONS CENTER

EVENT NOTIFICATION WORKSHEET

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	CALL BACK #: ENS / ( ) -
1011 CST	Sequoyah Fuels	-	Bill Huffman (HOO)	

EVENT TIME & ZONE	EVENT DATE
AM - CST	03/10/92
POWER/MODE BEFORE	**POWER/MODE AFTER**
N/A	N/A

EVENT CLASSIFICATION(S)

	GENERAL EMERGENCY	GEN/AAEC
	SITE AREA EMERGENCY	SIT/AAEC
	ALERT	ALE/AAEC
	UNUSUAL EVENT	UNU/AAEC
	50.72 NON-EMERGENCY (see items below)	
	PHYSICAL SECURITY (73.71)	DDDD
	TRANSPORTATION EVENT	NTRA
	20.403 MATERIAL/EXPOSURE	B???
✓	OTHER	N???

50.72(b)(1) 1-hr NON-EMERGENCY

i.A	TS Required S/D	ASHU
i.B	TS Deviation	ADEV
ii	Degraded Condition	ADEG
ii.A	Unanalyzed Condition	AUNA
ii.B	Outside Design Basis	AOUT
ii.C	Not Covered By OPs/EPs	ACNC
iii	Earthquake	ANEA
iii	Flood	ANFL
iii	Hurricane	ANHU
iii	Ice/Hail	ANIC
iii	Lightning	ANLI
iii	Tornado	ANTO
iii	Oth Natural Phenomenon	ANOT
iv	ECCS Discharge to RCS	ACCS
v	Lost ENS	AENS
v	Lost Emerg. Assessment	AARC
v	Lost Offsite Comms.	AESS
vi	Fire	AFIR
vi	Toxic Gas	ACHE
vi	Rad Release	ARAD
vi	Oth Hampering Safe Op	AHIN

50.72(b)(2) 4-hr NON-EMERGENCY

i	Degrade While in S/D	ADAS
ii	RPS Actuation (scram)	ARPS
ii	ESF Actuation	AESF
iii.A	Safe S/D Capability	AINA
iii.B	RHR Capability	AINB
iii.C	Control of Rad Rel	AINC
iii.D	Accident Mitigation	AIND
iv.A	Air Release > 2X App B	AAIR
iv.B	Liq Release > 2X App B	ALIQ
v	Offsite Medical	AMED
vi	Offsite Notification	APRE

EVENT DESCRIPTION

Event # 22987

At 1044 EST the HOO was given a 24 hour notification as required by 10CFR 40.60 B.1.

While performing more stringent surveys to detect contamination in unrestricted areas, they found previously used Raffinate Treatment Equipment (specifically a pipe and pipe floating devices) to be contaminated with both fixed and removable contamination.

The contamination is predominately natural uranium, Thorium 230, and Radium 226.

Contamination levels are.

Fixed α - 200 - 1600 DPM/100cm^2

Removable α - 0 - 1530 DPM/100 cm^2

Fixed β-γ - 5000 - 30,000 DPM/100 cm^2

Removable $\beta\gamma$ - 0 - 7242 DPM/100 cm^2

The pipe and floating devices were located south of the fertilizer loading station.

The licensee has posted the area as a controlled entry area which is secured a locked fence during non-business hours but open to personnel during business hours.

The licensee's health and safety staff have evaluated this event and determined that no personnel exposure above normal operating levels occurred.

(NOTE: Mike Vasquez is aware of event.) E-34

Include: Systems effected, actuations & their initiating signals, causes, effects of the event on the plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE
NRC RESIDENT N/A			→
STATE(s)			
OTHER GOV AGENCIES		✓	
MEDIA/PRESS RELEASE		✓	

ANYTHING UNUSUAL OR NOT UNDERSTOOD?	YES (Explain above)	NO
DID ALL SYSTEMS FUNCTION AS REQUIRED?	YES	NO (Explain above)
MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:	ADDITIONAL INFO ON RACK?

FUEL CYCLE FACILITY

EVENT NUMBER: 23003

FACILITY:
RXTYPE: URANIUM HEXAFLUORIDE PRODUCTION
COMMENTS: UF6 CONVERSION (WET PROCESS)

NOTIFICATION DATE: 03/13/92
NOTIFICATION TIME: 10:45 [ET]
EVENT DATE: 03/12/92
EVENT TIME: 09:45[CST]
LAST UPDATE DATE: 03/13/92
REGION: 4

TOWN: GORE
COUNTY: EAST SEQUOYAH STATE: OK
LICENSE#: SUB-1010 AGREEMENT: N
DOCKET: 04008027

PERSON	ORGANIZA
JAMES GAGLIARDO	RDO
JOHN AUSTIN	EO

NRC NOTIFIED BY: ROBERT MILLER
DUTY OFFICER: WILLIAM HUFFMAN

EMERGENCY CLASS: NOT APPLICABLE
10 CFR SECTION:
JBAC 40.60(b)(1)(i) ACCESS DENIED >24 HRS

EVENT TEXT

POTENTIALLY CONTAMINATED LIQUID DRIPPING ONTO GROUND FROM A STEAM LINE AT SEQUOYAH FUELS CORPORATION, GORE, OKLAHOMA.

LICENSEE OBSERVED CONDENSATE FROM A STEAM CONDENSATE DRAIN DRIPPING ONTO THE GROUND INSTEAD OF INTO THE INTENDED DRAINAGE CATCH BASIN. APPARENTLY WIND CONDITIONS WERE BLOWING THE DRAINAGE ENOUGH TO CAUSE IT TO MISS THE BASIN AS IT DRAINED. THE DRAINAGE HAS BEEN SECURED AND THE AREA POSTED AS A CONTROLLED ACCESS AREA.

THE HEALTH AND SAFETY DEPARTMENT HAS BEEN REQUESTED TO PERFORM A RADIATION SURVEY. THE ISOTOPE INVOLVED IS NATURAL URANIUM. PRESENTLY, THE QUANTITY OF MATERIAL INVOLVED IS UNKNOWN. THE LICENSEE CHARACTERIZED THE TOTAL AMOUNT THAT DRIPPED ONTO THE GROUND AS INSIGNIFICANT. THE AREA WILL BE EXCAVATED AS NECESSARY IF CONTAMINATION IS FOUND.

THE STEAM LINE IS USED TO HEAT AN URANYL NITRATE HEXAHYDRATE EVAPORATOR AND IS SUSPECTED TO HAVE BEEN CONTAMINATED THROUGH PREVIOUS SYSTEM LEAKAGE.

LICENSEE HAS EVALUATED THE SITUATION AND DETERMINED THAT IT DID NOT CONTRIBUTE ANY EXPOSURE TO PERSONNEL ABOVE NORMAL OPERATING CONDITIONS.

SEQUOYAH FUELS CORPORATION

FAX NO: (918) 489-2291
TEL NO: (918) 489-3327

DATE: 03 / 13 / 92

TO: NRC RIV Administrator
Robert Martin

FAX NO: 817/860-8210

FROM: Robert Miller

TOTAL NUMBER OF PAGES INCLUDING COVER SHEET: two

MESSAGE: 10 CFR 40.60 (b)(1) notification: UNH evaporator.

Sequoyah Fuels Corporation
24 Hour Notification
10 CFR 40.60 (b)(1)
March 12, 1992

(i) The caller's name and call back number:

Robert Miller, 918/489-3244.

(ii) A description of the event:

The event was discovered at 0945 on March 12, 1992. Contamination was identified by an area supervisor during a routine facility inspection. the area supervisor observed condensate from a steam condensate drain line dripping onto the ground instead of into the intended catch basin. The Health and Safety Department was contacted and requested to perform a radiation survey. Currently, an area around the discharge of the condensate drain line has been posted as a Controlled Access Area. This type posting establishes control over future entry into this area.

(iii) The exact location of the event:

The event occurred on the north side of the uranyl nitrate hexahydrate evaporator at Sequoyah Fuels Corporation (SFC). SFC is located at Highway 10 and Interstate 40, Gore, Oklahoma 74435.

(iv) The isotopes, quantities, and chemical and physical form of the licensed material involved:

The isotope involved is natural uranium. Presently, the quantity of material involved is unknown. It is present as uranyl nitrate in aqueous solution.

(v) Any personnel radiation exposure data available:

None. The SFC Health and Safety staff has evaluated the situation and determined that it did not contribute any exposure to personnel above normal operating conditions.

Sequoyah Fuels Corporation
24 hour Notification
10 CFR 40.60 (b) (1)
February 26, 1992

(i) The caller's name and call back number:

Robert Miller, 918/489-3244.

(ii) A description of the event:

Contamination was identified following surveys performed to evaluate radiological conditions in the Control Room. Currently, one area in the Control Room has been posted as a Controlled Access Area. This type posting establishes control over future entry into this area. The posted area is a walkway behind the instrument panel in the Control Room. The walkway allows access to the instruments in the instrument panel for repairs and maintenance. The removable contamination is present on the instrument support racks.

This notification is not associated with any recent contamination event or incident. Application of new, more stringent surface contamination criteria associated with a comprehensive survey of the unrestricted area at the facility has identified this location as a contaminated area.

The Control Room is an unrestricted area on the second floor of the main process building.

(iii) The exact location of the event:

The event was discovered in the Control Room at Sequoyah Fuels Corporation (SFC). SFC is located at Highway 10 and Interstate 40, Gore, Oklahoma 74435.

(iv) The isotopes, quantities, and chemical and physical form of the licensed material involved:

The isotope involved is natural uranium. It is present as an oxide in solid form. The contamination is present as both fixed and removable. The ranges of contamination discovered to date are as follows:

Alpha direct: <339 dpm/100cm^2,
Alpha removable: 0 - 376 dpm/100cm^2,
Beta/gamma direct: <1320 - 44880 dpm/100cm^2,
Beta/gamma removable: 0 - 1621 dpm/100cm^2.

(v) Any personnel radiation exposure data available:

None. The SFC Health and Safety staff has evaluated the situation and determined that it did not contribute any exposure to personnel above normal operating conditions.

I-31

Record of Conversation
February 27, 1992

Person Receiving Call: S. Mathews Vasques, RIV

From: Mr. Reggie Cook, Controller, SFC

Subject: Concerns from a Member of the General Public

After receiving a call from Bob Miller (Licensing Engineer), I asked that Reggie call me with further details. Reggie called me about 2:40 pm to let us know that a lady called Bob Bates of the County Health department yesterday afternoon. She had heard a rumor that a local SFC contractor (Rogers Construction) was storing contaminated wood at his work shop that had burned down last month. She was concerned because her brother has purchased wood from the contractor and used the wood to build his roof. She was worried that her brother's roof was contaminated.

The County turned the matter over to SFC.

Reggie told me that SFC has contracted with Rogers Construction several times over the past few years and had been recently contracted with him to build wooden boxes that SFC uses to transport crushed contaminated drums for disposal. SFC had given Rogers money to purchase wood and he had been building the boxes at his work shop in Vian, Oklahoma. About a month ago, the workshop burned down, with some boxes that had not been delivered to SFC. Therefore, Reggie speculated that people may have thought the boxes were contaminated, when in fact they were eventually to be used for transporting contaminated crushed drums.

Reggie told me that the boxes do not return to SFC after transporting crushed drums for disposal. Also, no boxes had been received at the plant and then released back to Rogers.

Reggie had been trying to call both Rogers and the lady, but had not been able to reach them. Reggie acknowledged many questions still remain. He did not when the lady's brother had purchased the wood or if Rogers had somehow got some wood released from SFC in the past. Reggie said he would keep us informed and the county of how SFC addresses the concern. He did state that if the lady wants, SFC could replace and dispose of the survey the roof.

e

I-30

CONVERSATION RECORD

Licensee Contacts: John Richardson, Vice President, Regulatory Affairs, SFC
Scott Munson, Manager, Health & Safety Department, SFC
Tom Kruppa, Area Manager, SFC

Representing: Sequoyan Fuels Corporation
(Docket/License: 40-8027/SUB-1010)

Region IV Staff: G. M. Vasquez, Senior Health Physicist
L. L. Kasner, Senior Radiation Specialist

Date(s) of Contact: February 24 and 26, 1992

SUBJECT: Personnel Contamination Incident

Background:

On February 24, 1992, John Richardson provided a "courtesy" notification to Mike Vasquez regarding a contamination incident which occurred on the evening of February 22, 1992.

As initially reported by Mr. Richardson, an individual had been working in the Solvent Extraction building when he was sprayed by process fluids (specific nature unknown at that time) on his forearm and leg. Mr. Richardson was unfamiliar with the exact nature of the work at that time, but reported that the fluids were known to be of a low PH. Personal monitoring performed in the change room revealed that the contamination was limited to the individual's forearm and upper leg, and decontamination procedures were implemented promptly. The health & safety staff were able to remove all skin contamination except for an area on the individual's hand. At that time, it was determined that medical attention was not required, and the health & safety supervisor (a contractor technician) sent the individual home with a rubber/plastic glove to allow perspiration to bring the remaining contamination to the skin surface. This effort was successful in removing the contamination as was confirmed by repeat surveys the following day.

In reviewing the initial information provided, several questions were not addressed. Specifically, we did not know the qualifications of the individual who determined that medical attention was not necessary (of interest since the fluids were known to be acidic), the basis for the decision or the nature of the work in progress when the incident occurred. It should be noted that under certain conditions, when medical attention is required due to exposure to process fluids or constituents, a report of the incident is required.

To resolve these questions, the licensee was requested to respond to a few questions, which were later reviewed with Kasner on February 26.

I-28

Summary of Incident:

On the evening of February 22 (between 4 pm and 12 am), several operators were assigned the task of completing a fluid transfer in the Solvent Extraction building. The assignment involved transferring raffinate from a holding tank back to the process for future uranium recovery. This was a planned, routine activity resulting from the shutdown of operations at the facility. The licensee had expected to re-process this particular tank because of high uranium content (0.5 gm/l), which it reported as a result of normal backflow in the decanters when this portion of the process is not operating.

The licensee normally uses a hose to complete the transfer and requires a visual inspection of the hose coupling prior to connection with the holding tank outlet. In this case, visual inspection failed to detect that the neoprene gasket had deteriorated and once the transfer was initiated, there was leakage at the coupling. As a result, an operator who was working nearby was sprayed with fluid. The area manager reported that the fluid was a 1.2 molar nitric solution with a PH of less than 1.

Licensee staff acknowledged that the decision that medical attention was not required was made by an employee with EMT training; however, the licensee's occupational health nurse believed that she should have been consulted when the event occurred. Likewise, the health & safety supervisor on duty at the time failed to inform the Manager, Health and Safety as required under procedure G-11A (governs response to personnel contamination). The licensee had identified these two issues as deficiencies in the staff's response, as well as a violation of site procedures. To correct these issues, the health & safety supervisor was informed of the requirement to notify his manager, and the procedure for personnel decontamination (currently under development and review) will be modified to include a line notation that the occupational health nurse should be notified in certain cases.

From an operations standpoint, the area manager is evaluating the use of piping to complete future similar transfers or, alternatively, the replacement of all hose couplings with teflon fittings to eliminate the problem of gasket wear and exposure to process fluids.

As of February 26, the operator's arm remained reddened.

cc:
JL Callan
CL Cain
GM Vasquez
LL Kasner

CONVERSATION RECORD

REGION IV STAFF: G. Michael Vasquez, Senior Health Physicist
Linda Kasner, Senior Radiation Specialist

INDIVIDUAL INTERVIEWED: Dr. John Garrick, PLG

DATE: January 8, 1992

Background: The purpose of this discussion was to review Dr. Garrick's past and present involvement with various projects associated with the Sequoyah Fuels Corporation (SFC) and to determine whether we could reasonably conclude that the nature of his involvement was such that he could remain objective in his present role. Dr. Garrick had served as the project director for an independent oversight team (IOT) following the 1986 accident at SFC, and he currently serves as the project director for the Sequoyah Oversight Team (SOT) and as chairman for the Deadlines Review Committee (DRC). His role in both the SOT and DRC essentially required that he remain objective in reviewing and evaluating a variety of activities, including those which he had been involved with in the past.

Discussion: Dr. Garrick provided a brief review of his involvement with various projects associated with SFC including those identified above. Dr. Garrick also elected to review a collection of comments contained in the SOT's report, which the committee intended to present to Mr. Sheppard the following day. A brief summary of the comments shared with us appear below:

* The NRC concluded that based on its appraisal, SFC was not ready for restart as of the date of the report or in Garrick's opinion, the date of the presentation. Garrick acknowledged that Sheppard had informed him that he intended to make a presentation to the NRC regarding actions completed during the period following the NRC site visit. The NRC also added that they believed that SFC would be ready for restart in the near future. When questioned regarding what the statement meant in terms of time, Garrick noted that a 3-4 week period would probably be sufficient time for SFC to address the committee's concerns.

* The committee had, as Garrick described, several negative observations regarding various program areas, including:

  Management concerns identified in 1990 were not yet resolved in that personnel responsibilities were not yet defined, communication issues were not fully addressed, the goals developed in response to the MAT report which should have been addressed by December 1991 were not yet complete, and the Conduct of Operations program was not yet ready. Further, the NRC noted that in order to establish confidence with regulatory agencies, SFC management needed to define attainable goals rather than providing schedules which were unachievable. In support of this, the committee cited

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CFC's response to the MAT report, noting that the time frame identified for those elements which were pertinent to restart was unreasonable and had not been met.

The procedure review program was not yet complete for those procedures identified as necessary for restart, and CFC had not been fully successful in implementing the review process in a systematic fashion. Garrick noted that the RRC was aware of and concerned that procedures had not been fully tested prior to PORC review.

Management had not been fully successful in communicating their expectations regarding the "nuclear professional" attitude to plant employees. The RRC noted that in their interviews with various employees, the employees expressed reluctance to change and some did not understand what the concept meant. The committee further noted that they had identified groups within the workforce who may respond adversely to this change.

Management had not yet fully developed a strategy for ensuring that the changes currently in progress remained a long-lasting change.

FUEL CYCLE FACILITY

EVENT NUMBER: 22844

FACILITY:
RXTYPE: URANIUM HEXAFLUORIDE PRODUCTION
COMMENTS: UF6 CONVERSION (WET PROCESS)

NOTIFICATION DATE: 02/19/92
NOTIFICATION TIME: 16:59 [ET]
EVENT DATE: 02/19/92
EVENT TIME: 08:40[CST]
LAST UPDATE DATE: 02/19/92

TOWN: GORE
COUNTY: EAST SEQUOYAH
LICENSE#: SUB-1010 AGREEMENT: N
DOCKET: 04008027

REGION: 4
STATE: OK

PERSON ORGANIZA
RONALD BAER RDO

NRC NOTIFIED BY: ROBERT MILLER
DUTY OFFICER: STEVE SANDIN

EMERGENCY CLASS: NOT APPLICABLE
10 CFR SECTION:
JBBE 40.60(b)(2)(i) ACCID MIT EQUIP FAILS
JBBF 40.60(b)(2)(ii) EQUIP DISABLED/FAILS
JBBG 40.60(b)(2)(iii) REDUNDANT EQUIP INOP

EVENT TEXT

LICENSEE IS MAKING A 24 HR NOTIFICATION OF A SAFETY SYSTEM WHOSE AUTOMATIC OPERATION WAS RENDERED INOPERABLE FOR REPAIRS.

A DESCRIPTION OF THE EVENT:

"THE EVENT OCCURRED AT 0840 ON FEBRUARY 19, 1992. THE EVENT REVOLVES AROUND PLANNED MAINTENANCE ON THE FOAM DELUGE SYSTEM IN THE SOLVENT EXTRACTION (SX) BUILDING. THE MAINTENANCE ACTIVITY WAS REPAIR OF SMALL LEAKS IN THE SUPERVISORY NITROGEN LINES. THE SUPERVISORY LINE MAINTAINS THE AUTOMATIC ACTIVATION CAPABILITY OF THE FOAM DELUGE SYSTEM. THE LEAKS DID NOT CAUSE THE SYSTEM TO MALFUNCTION OR FAIL.

THE FOAM DELUGE SYSTEM IS AN AUTOMATICALLY INITIATED FIRE EXTINGUISHING SYSTEM IN THE SX BUILDING. IT IS REQUIRED BY LICENSE TO "BE MAINTAINED CONTINUALLY OPERABLE".

IN ORDER TO REPAIR THE LEAKS IT WAS NECESSARY TO DISCONNECT THE FOAM DELUGE SYSTEM'S AUTOMATIC ACTIVATION MECHANISM. IN THIS CASE, A FIRE WATCH WAS POSTED TO PROVIDE MANUAL ACTIVATION OF THE SYSTEM IF NECESSARY.

THE FOAM DELUGE SYSTEM WAS RETURNED TO AUTOMATICALLY INITIATED STATUS AT 1420 ON FEBRUARY 19, 1992.

THIS NOTIFICATION IS BEING MADE PURSUANT TO A LITERAL READING OF 10 CFR 40.60(b)(2) AND WITHOUT REGARD TO ANY INTERPRETATION OF THE INTENT OF THE REGULATION."

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THE EXACT LOCATION OF THE EVENT:

"THE EVENT OCCURRED AT THE SX BUILDING SEQUOYAH FUELS CORPORATION (SFC).

THE ISOTOPES, QUANTITIES, AND CHEMICAL AND PHYSICAL FORM OF THE LICENSED MATERIAL INVOLVED:

"THE ISOTOPE INVOLVED IS NATURAL URANIUM. IT IS PRESENT AS URANYL NITRATE IN AQUEOUS SOLUTION.

THE SFC HEALTH AND SAFETY STAFF HAS EVALUATED THE SITUATION AND DETERMINED THAT IT DID NOT CONTRIBUTE ANY EXPOSURE TO PERSONNEL ABOVE NORMAL OPERATING CONDITIONS."

LICENSEE WILL FAX A COPY OF THEIR NOTIFICATION TO REGION 4.

Sequoyah Fuels Corporation
24 Hour Notification
10 CFR 40.60 (b) (2)
February 19, 1992

(i) The caller's name and call back number:

Robert Miller, 918/489-3244.

(ii) A description of the event:

The event occurred at 0840 on February 19, 1992.
The event revolves around planned maintenance on the foam eluge system in the solvent extraction (SX) building. The aintenance activity was repair of small leaks in the supervisory itrogen lines. The supervisory line maintains the automatic ctivation capability of the foam deluge system. The leaks did ot cause the system to malfunction or fail.
The foam deluge system is an automatically initiated fire xtinguishing system in the SX building. It is required by icense to "be maintained continually operable."
In order to repair the leaks it was necessary to disconnect he foam deluge system's automatic activation mechanism. In this ase, a fire watch was posted to provide for manual activation of he system if necessary.
The foam deluge system was returned to automatically initiated status a 1420 on February 19, 1992.
This notification is being made pursuant to a literal reading of 10 CFR 40.60(b)(2) and without regard to any interpretation of the intent of the regulation.

(iii) The exact location of the event:

The event occurred at the SX building Sequoyah Fuels Corporation (SFC). SFC is located at Highway 10 and Interstate 40, Gore, Oklahoma 74435.

(iv) The isotopes, quantities, and chemical and physical form of the licensed material involved:

The isotope involved is natural uranium. It is present as uranyl nitrate in aqueous solution.

(v) Any personnel radiation exposure data available:

The SFC Health and Safety staff has evaluated the situation and determined that it did not contribute any exposure to personnel above normal operating conditions.

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SEQUOYAH FUELS CORPORATION

FAX NO: (918) 489-2291
TEL NO: (918) 489-3327

DATE: 02/12/92

TO: NRC RIV Administrator FAX NO: 817/860-8210

FROM: Robert Miller

TOTAL NUMBER OF PAGES INCLUDING COVER SHEET: three

MESSAGE:

10 CFR 40.60 (b)(1) notification

copies to:
Callan
Sanborn
Gilliland
MONTGOMERY

I-24

Sequoyah Fuels Corporation
24 Hour Notification
10 CFR 40.60 (b) (1)
February 12, 1992

(i) The caller's name and call back number:

Robert Miller, 918/489-3244.

(ii) A description of the event:

Contamination was identified during preliminary surveys performed to evaluate radiological conditions at treated raffinate storage pond 3E. The survey was conducted because direct contamination had just previously been discovered on worker's boots after they had been working around Pond 3E. Radiological surveys of associated vehicles were negative. The survey was conducted at Pond 3E at approximately 0900 on February 12, 1992. Currently, the entirety of Pond 3E has been posted as a Temporary Controlled Access Area. (This type posting establishes additional radiological controls over future entry into this area.) The additional controls will remain in place until a comprehensive survey can be performed and the area decontaminated if necessary.

This notification is not associated with any recent contamination event or incident. Application of new, more stringent surface contamination criteria at the facility has identified this location as a contaminated area. Also, the additional controls were established conservatively since the removable contamination was actually below the applicable facility limits.

Pond 3E is in an unrestricted area adjacent to the main plant facility. Pond 3E is accessed through three gates which are locked during nonbusiness hours.

(iii) The exact location of the event:

The event was discovered at the southwest corner of treated raffinate storage pond 3E at Sequoyah Fuels Corporation (SFC). SFC is located at Highway 10 and Interstate 40, Gore, Oklahoma 74435.

(iv) The isotopes, quantities, and chemical and physical form of the licensed material involved:

The isotope involved is natural uranium. It is present as an oxide in a solid form. The contamination is present as both fixed and removable. The preliminary survey of the southwest corner of Pond 3E indicated the following levels of contamination:

Alpha direct: average 10,000 dpm/100 cm^2,
maximum 40,000 dpm/100 cm^2,

Alpha removable: maximum 194 dpm/100 cm^2,

Beta/gamma direct: average 20,000 dpm/100 cm^2,
maximum 50,000 dpm/100 cm^2

Beta/gamma removable: maximum 923 dpm/100 cm^2.

(v) Any personnel radiation exposure data available:

None. The SFC Health and Safety staff has evaluated the situation and determined that it did not contribute any exposure to personnel above normal operating conditions.

2/26/92

CONVERSATION RECORD

Contact: Gary Konwinski
URFO office

RIV: L. L. Kasner

SUBJECT: Estimation of the Volume of Contaminated Soil and Sludge
At the Sequoyah Fuels Corporation facility

Background: In discussions regarding future decommissioning issues at subject facility, DRSS staff was requested to provide RIV management with an estimate of the total soil volume currently present at the facility which, if not remediated, would require future waste disposal consideration. Gary Konwinski was requested to assist in this evaluation using data provided in the "Facility Environmental Investigation" report prepared by SFC's consultant, as well as other historical data available in the docket.

Summary: Using data from the study recently completed by RSA (SFC consultant), Gary estimated the following:

Total Volume of Contaminated Soils

3,636,000 cubic feet; considering concentrations of 40 ug/gm and above, and for depths to 30 feet.

Total Volume of Contaminated Sludge

2,527,000 cubic feet

The figures shown above do not include contaminated soils beyond SFC's property line or the volume of soil excavated as a result of the 1986 accident and the 1990 Solvent Extraction excavation. We do not have sufficient data at this time to determine these figures.

cc:
JM Montgomery
JL Callan
CJ Cain
GM Vasquez
LL Kasner

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NRC FORM 361A (6-89)

U.S. NUCLEAR REGULATORY COMMISSION
OPERATIONS CENTER

EVENT NOTIFICATION WORKSHEET

RDO @ 1900C

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	CALL BACK # : ENS / or ( )
1833 E	SEQUOYAH FUELS		ROBERT MILLER	

EVENT TIME & ZONE	EVENT DATE
1030 C	1 / 10 / 92

POWER/MODE BEFORE	POWER/MODE AFTER
N/A	N/A

EVENT CLASSIFICATION(S)

	GENERAL EMERGENCY	GEN/AAEC
	SITE AREA EMERGENCY	SIT/AAEC
	ALERT	ALE/AAEC
	UNUSUAL EVENT	UNU/AAEC
	50.72 NON EMERGENCY	(see items below)
	PHYSICAL SECURITY (73.71)	DDDD
	TRANSPORTATION EVENT	NTRA
	20.403 MATERIAL/EXPOSURE	B???
	OTHER	N???

50.72(b)(1) 1-hr NON-EMERGENCY

i.A	TS Required S/D	ASHU
i.B	TS Deviation	ADEV
ii	Degraded Condition	ADEG
ii.A	Unanalyzed Condition	AUNA
ii.B	Outside Design Basis	AOUT
ii.C	Not Covered By OPs/EPs	ACNC
iii	Earthquake	ANEA
iii	Flood	ANFL
iii	Hurricane	ANHU
iii	Ice/Hail	ANIC
iii	Lightning	ANLI
iii	Tornado	ANTO
iii	Oth Natural Phenomenon	ANOT
iv	ECCS Discharge to RCS	ACCS
v	Lost ENS	AENS
v	Lost Emerg. Assessment	AARC
v	Lost Offsite Comms	AESS
vi	Fire	AFIR
vi	Toxic Gas	ACHE
vi	Rad Release	ARAD
vi	Oth Hampering Safe Op	AHIN

50.72(b)(2) 4-hr NON-EMERGENCY

i	Degrade While in S/D	ADAS
ii	RPS Actuation (scram)	ARPS
ii	ESF Actuation	AESF
iii.A	Safe S/D Capability	AINA
iii.B	RHR Capability	AINB
iii.C	Control of Rad Rel	AINC
iii.D	Accident Mitigation	AIND
iv.A	Air Release > 2X App B	AAIR
iv.B	Liq Release > 2X App B	ALIQ
v	Offsite Medical	AMED
vi	Offsite Notification	APRE

EVENT DESCRIPTION

Event # 22588

Sequoyah Fuels has had to restrict access to part of the facility for more than 24 hours due to contamination. This required notification under 20.403. Facility has notified Oklahoma Department of Health.

During the period of 1/6-9/92 16 dust collectors were changed in the ventilation system without shutting down the system. As a result, depleted Uranium dust was deposited on the roof of the DUF_4 Building and the north end of the low bay. The highest contamination levels (on the roof) were on the order of 24,000 dpm/100 cm^2 alpha and 403,000 dpm/100 cm^2 beta.

During the event, release levels are estimated to have been about 230 times MPC.

Decontamination is in progress. The area is posted for full face respirators. Decontamination is expected to be completed on Saturday, 1/11/92.

RDO notified D/DRSS, PAO, SLO.

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Include: Systems affected, actuations & their initiating signals, causes, effects of the event on the plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE
NRC RESIDENT			
STATE(s)	X		
LOCAL			
OTHER GOV AGENCIES			
MEDIA/PRESS RELEASE			

ANYTHING UNUSUAL OR NOT UNDERSTOOD?		YES (Explain above)	✓ NO
DID ALL SYSTEMS FUNCTION AS REQUIRED?	✓ YES		NO (Explain above)
MODE OF OPERATION UNTIL CORRECTED: S/D	ESTIMATE FOR RESTART DATE:		ADDITIONAL INFO ON BACK?

1/2

Sequoyah Fuels Corporation
24 Hour Notification
10 CFR 40.60 (b)(2)
January 10, 1992

his notification concerns Sequoyah Fuels Corporation's Sequoyah acility near Gore, Oklahoma. The Sequoyah Facility is a uranium onversion operation under NRC source material license SUB-1010. he individual making this report is Rob Miller of Sequoyah Fuels orporation, who can be contacted at 918/489-5511.

Description of Event

n January 10, 1992 at about 10:30 a.m., a Depleted UF4 (DUF4) perator observed a fine coating of green powder on the roof of the UF4 Plant. Health & Safety (H&S) was notified to assess the ituation. The H&S Tech observed a thin coating of powder which as widespread over the roof of the high bay. A thin layer was lso observed on the west side of the north low bay. Smears were aken on the roof. The highest alpha smear was 24,600 dpm/100 cm2. he highest beta smear was 433,000 dpm/100 cm2. Smears taken on he ground around the building indicated no contamination on the round. The roof has been posted so that full face respirator and rotective clothing are required.

n addition, it was discovered that a rubber boot on the discharge f the dust collector blower had allowed powder to escape inside he building, primarily on the fourth level. Health & Safety has osted the fourth and fifth levels to require a full face espirator and protective clothing for entry.

he discharge of depleted uranium tetrafluoride (depleted UF4) out he dust collector stack occurred as a result of the replacement of ll sixteen cartridge filters in the polishing dust collector on anuary 9.

n preparation for the job of replacing all the cartridges in the ist collector, a single cartridge was removed from the dust ollector on January 6 while the dust collector blower continued to un. The zone or cartridge cannot be isolated from the exhaust tream during changeout. After pulling and cleaning the single artridge, the stack sample for that day was 1.37 MPC. On the asis of this near-normal value, it was believed that the changeout ob could be accomplished without introducing contamination into he exhaust stack while allowing the dust collector blower to ontinue running (with the intent of keeping a negative pressure side the work-tent around the polishing dust collector to inimize airborne contamination in the work-tent).

fter completion of the cartridge replacements on January 9, it was oted that the work-tent was quite dirty inside. The mechanics who placed the cartridges noted that the cartridges had been heavily dusted with powder and were difficult to remove. Therefore, it ppeared that the job might have generated more contamination than ticipated. Consequently, the Depleted UF4 Manager notified the

2/2

lanager of Health and Safety that the air sampler on the dust ollector discharge might show a higher than normal concentration f depleted uranium and that it would probably be prudent to pull he sample early and analyze it immediately. The preliminary esults of the sample, taken at 4:30 p.m., indicated approximately 95 MPC (based on the values given in 10 CFR 20, Appendix B, Table I, Column I).

fter pulling another sample at 11:00 p.m., the weighted average or the 24 hour discharge for January 9 was 231 MPC (10 CFR 20, ppendix B, Table II, Column I), which equates to 1.3 pounds of epleted uranium released.

Location of Event

he event was discovered on the roof of the DUF4 plant of Sequoyah uels Corporation (SFC). SFC is located at Highway 10 and nterstate 40, Gore, OK 74435.

Isotope Involved

he isotope involved is depleted uranium. It is present as uranium etrafluoride in solid form. The contamination is present in asovable form. Quantities of contamination are described above.

Personnel Exposure and Release

he SFC Health & Safety staff has evaluated the situation and etermined that it did not contribute any exposure to personnel or eleases to the unrestricted area above normal operating onditions. Fixed location work area air samples were all below the acility action level of 0.5 MPC (10 CFR 20, Appendix B, Table I, olumn I). The H&S staff estimated the fenceline concentration for epleted uranium to be 0.06 MPC (10 CFR 20, Appendix B, Table II, olumn I).

egulatory Basis for Notification

his report is being made to the NRC since this was an unplanned ontamination event that (1) required access to the contaminated rea to be restricted for more than 24 hours by imposing additional adiological controls, and (2) involves a quantity of material reater than five times the lowest annual limit on intake specified n Appendix B of Sections 20.1001 - 20.2401 of 10 CFR 20 for U-238.

SEQUOYAH FUELS CORPORATION

FAX NO: (918) 489-2291
TEL NO: (918) 489-3327

DATE: 01 / 10 / 92

TO: Administrator
NRC Region IV

FAX NO: 817/860-8210

FROM: Robert Miller

TOTAL NUMBER OF PAGES INCLUDING COVER SHEET: three

MESSAGE:

10 CFR 40.60(b)(1) report.

NUCLEAR REGULATORY COMMISSION
SHARED INFORMATION NETWORK
OPERATIONS OFFICERS SUPPORT SYSTEM
EVENT NOTIFICATION - FUEL FACILITIES

EVENT NUMBER: 22588

FACILITY:
UNIT NO:
REGION: 4
DOCKET NO: 040-08027 - -
LICENSE TYPE: FUEL FACILITY
STATE: OK
EMERGENCY: N/A NOT APPLICABLE
LICENSE NO: SUB-1010
LICENSEE:
REPORT REQUIRED BY: 88B 20.403
DT2 20.403 (B)(3)
PRE 50.72 (B)(2)(VI)

EVENT DATE: 01/10/1992
EVENT TIME: 10:30 (CST)
NOTIFY DATE: 01/10/1992
NOTIFY TIME: 18:33 (EST)
CALLER: ROBERT MILLER
OPS OFFICER: RUDY KARSCH
NOTIFIED: RDO JOHN PELLET
EO JOHN HICKEY
AEOD JORDAN

UNIT	SCRAM CD	RX CRITL	INIT PWR	INIT RX MODE	CURR PWR	CURR RX MODE
	N	N	000		000	

DESCRIPTION TEXT

DISCHARGE OF DEPLETED URANIUM TETRAFLOURIDE (D UF4) OUT THE DUST COLLECTOR STACK WAS OBSERVED ON THE ROOF OF THE D UF4 PLANT. OPERATORS OBSERVED A FINE COATING OF GREEN POWDER ON THE ROOF OF THE D UF4 PLANT. A THIN LAYER WAS ALSO OBSERVED ON THE WEST SIDE OF THE NORTH LOW BAY. SMEARS ON THE ROOF WERE TAKEN. THE HIGHEST ALPHA SMEAR WAS 24,600 DPM/100 CM2. THE HIGHEST BETA SMEAR WAS 433,000 DPM/100 CM2. SMEARS TAKEN ON THE GROUND AROUND THE BUILDING INDICATED NO CONTAMINATION ON THE GROUND. THE ROOF HAS BEEN POSTED SO THAT FULL FACE RESPIRATOR AND PROTECTIVE CLOTHING ARE REQUIRED.
THE DISCHARGE OCCURRED WHEN ALL 16 CARTRIDGE FILTERS IN THE POLISHING DUST COLLECTOR WERE REPLACED BETWEEN JANUARY 6 AND JANUARY 9 WITHOUT TURNING OFF THE DUST COLLECTOR BLOWER. THE 24 HOUR WEIGHTED AVERAGE FOR THE DISCHARGE ON WAS 231 MPC, WHICH EQUATES TO 1.3 POUNDS OF DEPLETED URANIUM RELEASED.
THE LICENSEE HAS DETERMINED THAT THE RELEASE DID NOT CONTRIBUTE ANY EXPOSURE TO PERSONNEL OR RELEASES TO THE UNRESTRICTED AREA ABOVE NORMAL OPERATING CONDITIONS. DECONTAMINATION AND CLEANING OF THE ROOF IS IN PROGRESS. THE OKLAHOMA HEALTH DEPARTMENT WAS NOTIFIED BY THE LICENSEE.

HARMON, CURRAN, GALLAGHER & SPIELBERG
2001 S STREET, N.W.
SUITE 430
WASHINGTON, D.C. 20009-1125

GAIL McGREEVY HARMON
DIANE CURRAN
ANNE SPIELBERG
JANNE G. GALLAGHER
ERIC R. GLITZENSTEIN
KATHERINE A. MEYER
JESSICA A. LADD

TELEPHONE
(202) 328-3500
FAX
(202) 328-6918

April 23, 1992

BY HAND

FREEDOM OF INFORMATION ACT REQUEST
FOIA-92-204
Rec'd 4-24-92

Donnie H. Grimsley, Director
Division of Freedom of Information
and Publication Services
Office of Administration
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Freedom of Information Act Request

Dear Mr. Grimsley:

On behalf of Native Americans for a Clean Environment, and pursuant to the Freedom of Information Act, 5 U.S.C. § 552(b), et seq., I hereby request that you make available copies of any and all documents in the Nuclear Regulatory Commission's possession that discuss any issues relating to the construction, operation, licensing, or re-licensing of the Sequoyah Fuels Corporation ("SFC") uranium processing plant in Gore, Oklahoma; and/or any documents that discuss inspection and/or enforcement issues relating to that plant.

This request updates FOIA-91-81, which was submitted on February 27, 1991. It therefore covers documents issued on that date or later.

NACE is familiar with and has access to documents that are already in the NRC's Public Document Room in Washington, D.C., and does not seek a search for those documents. Rather, the purpose of this request is to obtain access to any other documents that may be in the possession of the NRC Staff but have not been sent to the Public Document Room.

Pursuant to NRC regulations at 10 C.F.R. § 9.85, we request that any searching and copying fees incurred as a result of this search be waived. Native Americans for a Clean Environment is a non-profit, tax-exempt organization that was formed for the purpose of educating the public about environmental issues, with emphasis on the nuclear industry. NACE has intervened in the license renewal proceeding for the SFC plant, and has brought enforcement action against SFC, which was shut down for seven

9212230194

months due to its unprecedented and egregious contamination and mismanagement of the site. Waiver of fees for this request is in the public interest, because it will assist NACE in investigating SFC's environmental and safety record and contributing to public debate regarding whether and under what conditions SFC should be allowed to operate its facility. NACE also merits a waiver of fees because it is a non-profit charitable organization with limited resources, and is unable to pay the large searching and copying fees that may be incurred as a result of this request.

In the alternative, we request that the NRC continue to grant NACE status as a "representative of the news media." See 10 C.F.R. § 9.39(a), National Securities Archives v. Department of Defense, 880 F.2d 1381 (D.C. Cir. 1989). As discussed in previous Freedom of Information Act request, NACE publishes a monthly newsletter, "NACE News," that reports to about 1,000 readers on environmental issues affecting Native Americans. For many years, NACE News has reported on the risks to public health and the environment posed by the Sequoyah Fuels Corporation's Gore, Oklahoma facility. A copy of NACE's most recent newsletter is attached.

If for any reason you decide to deny this fee waiver request, please contact me before incurring any charges on behalf of NACE.

I look forward to receiving your response within ten working days of receipt of this request, as required by the Freedom of Information Act.

Sincerely,

Diane Curran
Counsel to Native Americans
for a Clean Environment

cc: Lance Hughes
Director, NACE

NACE NEWS

NATIVE AMERICANS for a CLEAN ENVIRONMENT

(918)458-4322

TRY THE SOLAR SOLUTION TO NUCLEAR POLLUTION

FEBRUARY 1992

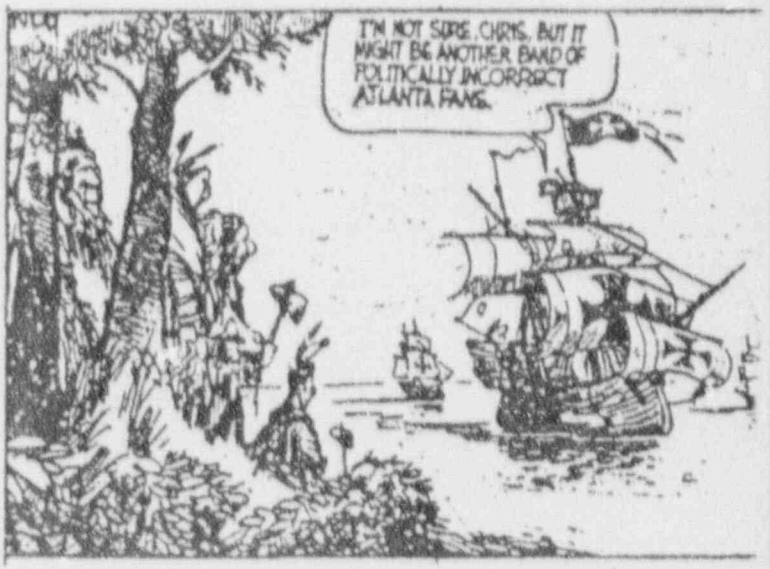
Volume VII No. 2

Greetings,

February gets most people to thinking about Spring being just a month or two away, so its time for us, to remind all our readers to recycle all those plastic six pack carriers. The six pack hammock is not only fun for kids & adults, it helps reduce trash in our over burdened landfills and saves the lives o marine life. For free instruct on making a six pack hammock, s a note & we'll send you the eas instructions.

* Happy 10th Anniversary to the cancellation of the Black Fox Nuclear Power Plant. Our eternal thanx to Carrie Dickerson, CASE and all the people who said NO! Stopping a nuke plant in mid-construction was no easy task and it seems like only days ago that we were all working so hard on that one. With the old Kerr-McGee plants shut down & the food irradiator cancelled, that only leaves 1 nuke plant in OK- Guess Who!

* The country's first food irradiation plant has now opened in Florida. Vindicator, Inc. started selling irradiated strawberries last month and sez they'll be shipping them to Washington state soon. To get an idea on how one could ever get built, local resident Frank Cueno said "I don't think the US government would permit something to come out like this if there was some kind of health risk involved". Another resident said "I'm tired of eating rotten strawberries". Get a grip people, there's a season for everything.



* As of press time, the Senate ha voted 52-43 in favor of th "National Energy Strategy" bil (S.2166). Although drilling in th Artic National Wildlife Refugee has for the time, been removed from th bill, it still contains language fo one-step licensing of new nuk plants. People really shouldn't le this gift to the nuclear indstr slide by. Contact you congressional reps & let them kno you want the "one-step" licensin rule out of S.2166. Our thanks (i you can believe it) to Senato Boren, who voted against one-ste licensing.

Look for this symbol -- the Radura. It means the food was irradiated.

Sequoyah Fuels

Old Dog, Old Tricks

We are happy to report that the old nuke conversion plant is still "shut down". We use the term lightly because the NRC still can't explain why there were high uranium emissions from the plant one month after it was "shut down". SFC is approaching 5 months of being out of service - so locals can breath a little easier.

A few weeks ago, NACE received a call from NUKEM (yes, that's right folks). NUKEM is one of the worlds largest and sleaziest uranium import and export companies. Seems we have put a kink in the international uranium market & they felt a need to whine about it. Oh, please, some of these guys still own slaves! A week following the NUKEM call, we got a call from Edlow, International (another uranium transporter). Edlow sez their customers are too nervous to send uranium to Sequoyah Fuels because they may never re-open (so?).

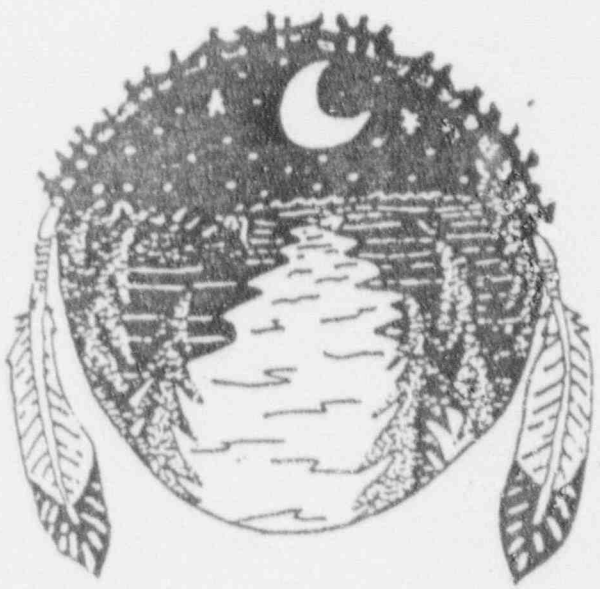
The most stupid event this past month was the public exit interview following a 1 week inspection for restart. SFC received a violation because contaminated materials were found in the training center (where the public meeting was). The problem being that the NRC identified the same contaminated materials 2 months ago & nothing had been done. During public comments, Joe Sheppard, the new prez., lost his temper & got to show his true colors (he's sooooo arrogant - you'd chink the queen of england had given him title to our communities). And where did all those neck ties come from? A little out of fashion in Carlile community -those consultants were sure easy to pick out.

The NRC has finished releasing th backlog of inspection reports fro last year and our apologies to ou friends out west. Seems SFC lost 2' (740 lbs.) of their radioactiv sludge load on the way to Quivir (Grants, NM) in September.

In other inspection news, SFC' insurance company sent out a inspector to look the place over. H had to leave his pants because the had become contaminated during hi visit. Just add him to the list o congressmen, NRC inspectors journalists, workers & residents.

The new tentative date for relicensing hearing is now set fo June '92 (3rd change) and we ar told that the NRC Commissioner won't be voting on a restar decision unt'l around April or May This should give the company som time to pile up more violations.

Oh, yea. Alexander Haig, the "I' in charge now" guy was recentl named a full member of GA's board o directors. Now don't we feel safe!



Leave Uranium in the Ground

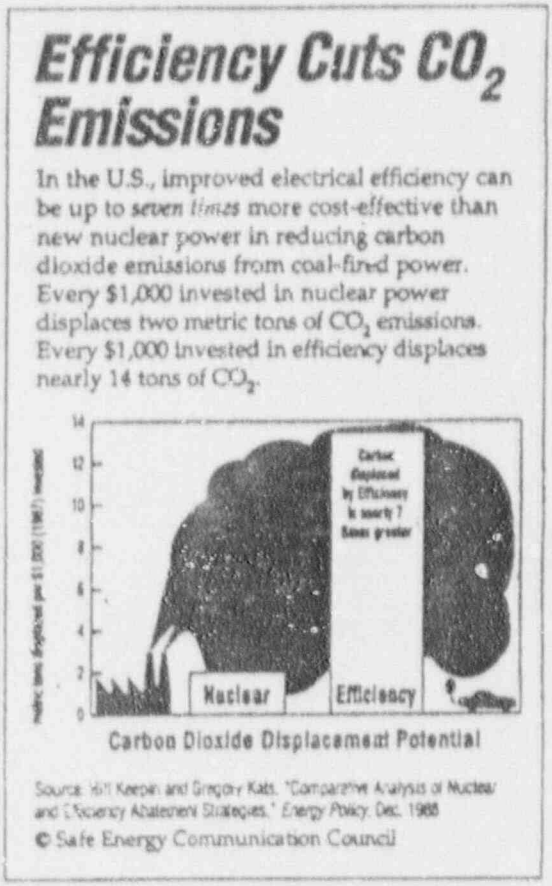
NUCLEAR NOTES

A federal judge has stopped the Energy Dept. from working on the Waste Isolation Pilot Project (WIPP) located in New Mexico. The judge sez the DOE has to get a transfer of title from the Congress & must also get a RCRA permit from the state of New Mexico.

* Heart of America Northwest, citing inaction by the state of Washington and the EPA, has announced they will sue the Dept. of Energy & Westinghouse Hanford. The citizens groups wants Hanford to stop dumping untreated radioactive waste into the ground near the Columbia River. Illegal discharges continue under a secret deal between the Washington State Dept. of Ecology and Hanford.

* The NRC deliberately lied to Congress in March 1990 about the readiness of the Seabrook reactor to start operation. According to an Inspector Generals report, the NRC lied about inspection of welds & whistleblower lawsuits. It's the ole' "fox guarding the henhouse", what should congress expect??

* Politics may come and go, but uranium can kill for eternity. With the break up of the Soviet Union, fears of a black market on uranium are coming true. Arrests and seizures for selling uranium have now happened in Italy, Switzerland, and Romania.



* Some of us may remember back in 1989 a Soviet submarine sank off the coast of Norway. You may also remember it was a nuclear powered sub. Well, recent tests of the sediment and analyzed in Norway show that radioactivity is leaking from the sub and contaminating the seabed. The sunken sub is next to some of Europe's richest fishing grounds.

* Ontario Hydro has been cutting its uranium purchases in Ontario & all uranium mining in Ontario should be stopped by 1996. Ontario is home to the infamous Elliot Lake uranium mine. The bad news is all mining efforts are being directed to Saskatchewan where the uranium is of a much higher quality. A word of advice to our brothers & sisters up north: Keep an eye on the George Hill family out of Saskatchewan, very deep ties to General Atomics & the Blue Brothers.

* Its starting out to be a very sad year for Indian newspapers. The Navajo Nation Today has suspended publication. Today was the only independent newspaper published on the Navajo Nation. One of the oldest Native newspapers in Canada, Kainai News, closed its doors in September after struggling for a year without gov't. subsidies. The fate of Tundra Times, which has been published weekly out of Alaska for 30 years, will be decided in March at a shareholders meeting. Tundra Times last issue was December 23.

* Conoco Oil has filed a lawsuit against the Ponca Tribe, protesting the 8% severance tax imposed by the tribe. The Ponca tribe and others have been forced to drink bottled water for decades thanks to Conoco's widespread contamination of water supplies.

* The South and Meso Ameri Indian Information Center (SAI now has its "500 Years of Ind Resistance: Resources for Acti kit available. The kits are US or international $14 from SA P.O. Box 28703, Oakland, CA 9460

* A deal struck with the Cham gov't. of Nicaragua gives Taiwanese timber reserves belon to the Sumo & Miskito Indians. timber reserves cover an area size of Delaware.

* A worldwide conference indigenous peoples will take p May 18-30 in Rio de Janerio, Br immediately before the UN Confer on the Environment & Developm For more info: Internati Indigenous Commission, Center of Common Future, Palais Wilson, Rue de Paquis, CH-1201, Gen Switzerland.

* At the Rosebud rez., it seems the dump company RSW is back again. Although the Chairman & Council say the mega-dump is a dead issue, there is a new proposal pending with the tribe and "executive sessions" are being held between the company rep & tribal officials. Research efforts by the Good Road Coalition have discovered that Rhett Albers, who represents RSW, also had an ash landfill project near Edgemont, SD. Seems Albers hauled in the ash, never disposed of it & then claimed bankruptcy when the state tried to get the company to comply. Do these guys go to some school for crooks & criminals? Same ole', same ole.

* In efforts to revitalize the Penobscot culture, tribal member Barry Dana has been offering courses in traditional arts, language and healing. For more info: Native Studies, P.O. Box 17, Old Town, ME 04468.

* Senate Bill 1687 "Indian Tribal Government Waste Act of 1991" is again rearing its ugly head in this session of Congress. It seems to be a commercial waste import bill to us, but regardless, it would only seem fair to have field hearings on the bill before it is introduced. To ask for field hearings, write: Senate Select Committee on Indian Affairs, Washington, D.C. 20510.

* A group in W. Virginia has put together a packet on how they successfully stopped a proposed MRS project. Could have some useful tips for all of us opposing an MRS in Indian country. Copies of the packets are $15 from: Mountaineer Policy Institute, 264 Hugh Street, Morgantown, WV, 26505 or call 304-296-8611.

MARK BOLTON

ENVIRONMENTAL

* In the continuing education of using disposable diapers, the pieces to the puzzle come one by one. Here's a large piece to clarify the picture of destruction that we're looking at.

The Sami from north of Scandinavia, some of Europe's last indigenous people, are under attack from some of Sweden's leading suppliers of forestry products & the U.S. based Procter & Gamble.

The forestry product companies; Stora, MoDo and Korsnas, claim they have a legal right of access to Scandinavian forests. The Sami have been herding reindeer & living sustainably for centuries in the northern forests.

Procter & Gamble enters into the picture by way of Pampers. Stora uses large areas of Swedish forests to supply pulp for Pampers. In 1990 Pampers sales totaled $12 billion.

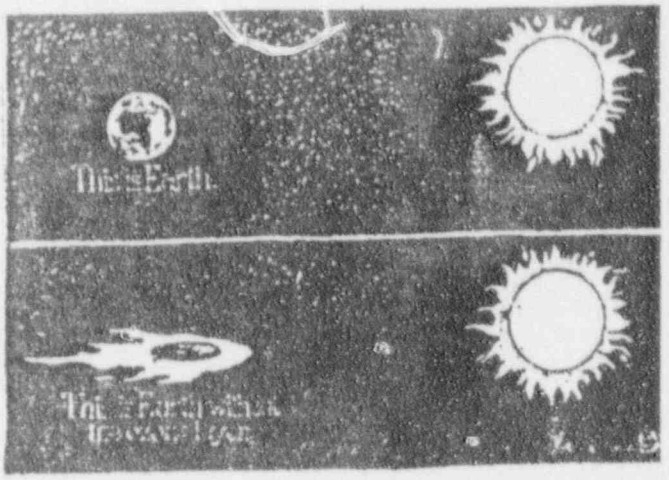
Sami activist Olof Johansson said "If we don't have the reindeer we will join all the other displaced aboriginal peoples of the world without an income. Our old culture has been preserved by the reindeer and the income they bring. Without them, our knowledge, languages and beliefs could be lost forever."

A Stora representative says "if the Sami want to use the land, then they should pay rent to the landowners." What a jerk! The reps. name is Karl Henriksson & we suggest you send all your dirty Pampers to him & then go out and buy cloth diapers. Wa-do.

* On Feb. 12, Ottawa County in N.E. Oklahoma voted to reject any commercial medical waste incinerators. Hooray, Ottawa!!

* Residents in Osage county Okla. are demanding that the stat act on their complaints over cro dusting. Aerial spraying of a hos of herbicides including 2,4-D hav riled residents who have had the homes sprayed.

* In news about the Ozone laye According to NASA, the amount protective ozone in the atmosphe over Antarctica fell to its lowe level in 13 years of recorded data The American Lung Association ha said it will sue the US gov't demanding it strengthen it ozo pollution standards. international scientific pan concluded in October that the ozo layer is thinning over parts of th US and the rest of the world spring and summer.

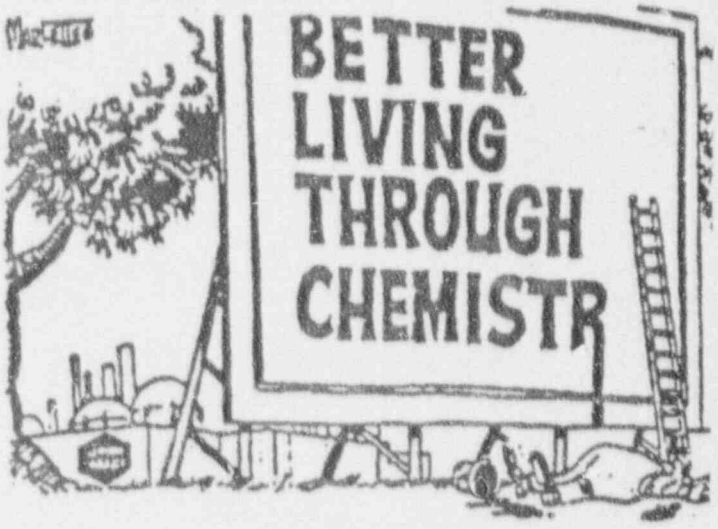


* As environmental news seeps out little by little from the Gulf War, an analysis by the British Atomic Energy commission sez that inhalation of uranium dust from the spent rounds of armor-piercing bullets could be a serious health hazard. The Commission estimates that up to 40 tons of uranium was left lying about Kuwaiti deserts.

Although the oil fires are out, 400 miles of Saudi coast line looks like a "long seaside highway"; 70 million barrels of crude still covers the landscape; crop production has dropped 40%; and farm animals are dying from eating contaminated grass. Say hello to the "new world order".

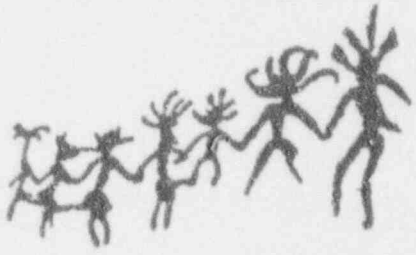
* A new report released by Public Citizen's Congress Watch documents that kids in Philadelphia public schools are routinely exposed to neuro-toxic pesticides year after year. "The lack of knowledge was so bad that one official actually said that the pesticide applicator would just zip in and zip out of the classrooms while the kids were there" sez Nancy Watzman of the schools-pesticide project.

* The Citizens' Mining Information Network has started a new bi-monthly newsletter to provide citizens with information on the environmental impacts of mineral development. If you're working on mining problems in your community, this is a new and promising resource. To get on the mail list write: Mine Monitor Southwest Research & Information Center, P.O. Box 4524, Albuquerque, NM, 87106 or call 505-262-1862.



* Citizens in Western Australia are fighting their government to stop exporting hazardous wastes out of the country. Cleanaway (give us a break)/Brambles Australia is attempting to gain gov't. approval to export waste before two panels responsible for a national strategy can release their reports.

In other Aussie news, citizens are also trying to protect the Yakabindie station from nickel mining. Yakabindie is an aboriginal custodial area and central to the Dreamtime story.



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