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UF₆ RELEASE AT THE SEQUOYAH FUELS CORPORATION CONVERSION
PLANT NEAR GORE, OKLAHOMA

JANUARY 4, 1986

A REVIEW OF FEDERAL AND STATE
RESPONSIBILITIES FOR REGULATING HEALTH AND SAFETY
HAZARDS AT NRC-LICENSED URANIUM FUEL
FABRICATION AND CONVERSION PLANTS

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ACRONYMS

CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFA	Cognizant Federal Agency
CWA	Clean Water Act
DOE	Department of Energy
DOL	Department of Labor
EICC	Emergency Information and Coordinating Center
ELD	The Office of the Executive Legal Director
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FRERP	Federal Radiological Emergency Response Plan
HF	hydrofluoric acid
IE	NRC Office of Inspection and Enforcement
MSDS	Materials Safety Data Sheet
NCP	National Contingency Plan
NEPA	National Environmental Policy Act
NPDES	National Pollution Discharge Elimination System
OSDH	Oklahoma State Department of Health
OSHA	Occupational Safety and Health Administration of Department of Labor
OSHAct	Occupational Safety and Health Act of 1970
RCRA	Resource Conservation and Recovery Act
SFC	Sequoyah Fuels Corporation
SNM	special nuclear material
TSCA	Toxic Substance Control Act
UF ₆	uranium hexafluoride
UO ₂ F ₂	uranyl fluoride

I. SUMMARY AND CONCLUSIONS

An accidental release of approximately 14 tons of uranium hexafluoride (UF_6) occurred at the Sequoyah Fuels Corporation uranium hexafluoride conversion facility near Gore, Oklahoma, on January 4, 1986. The release cloud separated into the reaction products uranyl fluoride (UO_2F_2) and hydrogen fluoride (hydrofluoric acid or HF). The acid (HF) was the dominant hazard to plant workers and the public who were exposed to the cloud. The incident brought into question the authorities of the various government agencies to regulate radiological and chemical hazards at NRC-licensed fuel fabrication and conversion facilities. The Commission requested that the extent of such authorities for regulating radiological and chemical hazards at these facilities be reviewed to determine whether or not a gap exists in the overall program of health and safety regulation.

The Nuclear Regulatory Commission (NRC) Office of Inspection and Enforcement (IE) has reviewed the responsibilities of various federal and state agencies for regulating health and safety hazards at NRC-licensed uranium fuel fabrication and conversion facilities. This review has resulted in the following IE conclusions:

- ° Regulatory jurisdictions shared primarily between NRC and OSHA appear to be complete in providing for the onsite health and safety of plant employees. However, the Sequoyah Fuels accident has identified the need for NRC and OSHA to more definitively describe and agree upon the specific plant processes which will be regulated by each of the two agencies. The development of a formal memorandum of agreement or similar document would be required.
- ° Adequate legislative authority exists to provide health and safety regulation of potential offsite radiological and chemical hazards associated with normal operations at NRC-licensed uranium fuel fabrication and conversion facilities.
- ° The NRC requires radiological contingency plans to be developed and implemented at uranium fuel fabrication and conversion facilities. Currently these plans address only the radiological hazards associated

with a release of nuclear materials. The staff's proposed rule on emergency planning for fuel cycle facilities (SECY-86-99) would require planning for any chemical hazards which are incident to the accidental release of nuclear materials. This regulatory approach, together with EPA's Chemical Emergency Preparedness Program, would provide completeness in federal regulation of the kind of release experienced at the Sequoyah Fuels facility.

- ° Federal contingency plans are in place to provide coordinated emergency response to offsite radiological and chemical releases from NRC-licensed facilities.

II. BACKGROUND

On January 4, 1986, at about 11:30 a.m., a cylinder containing about 14 tons of uranium hexafluoride (UF_6) ruptured at the Sequoyah Fuels Corporation (SFC) uranium conversion facility near Gore, Oklahoma. In about 30-40 minutes the entire contents of the container were discharged. During and for some minutes after the release of the material from the container, a dense white cloud was generated that was carried over and around the production facility by a 20 to 25 miles per hour wind. Once clear of the buildings, the cloud formed a plume that was distributed over a narrow path in a SSE direction. The major portion of the release was deposited on property owned by SFC, but a small amount of material was carried offsite over an interstate highway and private property to the south.

The accident occurred when an overfilled cylinder was being heated with steam in a chest outside the north door of the facility. The heating of the overfilled cylinder (essentially full) caused expansion of the UF_6 that resulted in a hydraulic rupture of the cylinder.

UF_6 is a very reactive chemical; on exposure to water, it forms the reaction products UO_2F_2 and HF ($UF_6 + 2H_2O \rightarrow UO_2F_2 + 4HF$). In this case, moisture in the air and water from the steam being used caused the reaction that resulted in a dense white cloud consisting of particulates of UO_2F_2 and HF in a vapor form. (Because UO_2F_2 is highly soluble, some of it also may also have been transported as a mist mixed with atmospheric moisture and condensed steam.)

During the accident, one employee could not find his way out of the dense fumes for a few minutes and later died from exposure to hydrofluoric acid. Thirty to forty other employees also were exposed to smaller amounts of HF during evacuation and in efforts to mitigate the release. Exposures to uranium (UO_2F_2) occurred also, but the HF exposure was the limiting hazard.

A few individuals offsite were exposed to minor amounts of HF. The highest exposure to individuals resulted from actions taken by SFC employees to mitigate the effects of the release. Health effects from the exposure of these individuals to uranium and hydrofluoric acid continue to be observed. To date, no serious

health effects have been noted. NRC has published a document, NUREG-1189, addressing the postulated health effects resulting from the accident. This study shows that during plume travel of the UF_6 reaction products (UO_2F_2 and HF), the UO_2F_2 from the cloud deposited almost completely on SFC property. The plume that continued some distance downwind was composed almost entirely of HF vapor, presenting a chemical rather than a radioactive material hazard.

These unique circumstances raised questions regarding regulatory responsibilities of various agencies. This paper addresses the general responsibilities of various federal and state agencies in regulating health and safety hazards at NRC-licensed uranium fuel fabrication and conversion facilities. Included in these discussions are the regulatory roles of the Nuclear Regulatory Commission (NRC), the Occupational Safety and Health Administration (OSHA), the Environmental Protection Agency (EPA), the Federal Emergency Management Agency (FEMA), the Department of Energy (DOE), and the State (Oklahoma).

III. RESPONSIBILITIES FOR REGULATING ONSITE HAZARDS AT NRC-LICENSED URANIUM FUEL FABRICATION AND CONVERSION FACILITIES

A. Nuclear Regulatory Commission (NRC)

Under the Atomic Energy Act of 1954, as amended and the Energy Reorganization Act, NRC licenses and regulates the possession and use of nuclear material on the premises of uranium fuel fabrication and conversion facilities (except DOE facilities) for the purpose of protecting workers and the public from radiation and radioactive materials. NRC regulations implementing the National Environmental Policy Act (NEPA) also require the NRC to protect environmental values. As with other nuclear facilities licensed by the NRC, various chemicals directly used in product processing are stored at the facility site. Other chemicals and equipment not directly used in processing nuclear materials, but necessary to support facility operations, are used and stored on the site as well.

When licensing this type of facility, the NRC assesses those conditions, processes, designs, or operations related to the facility that could reasonably be expected to impact on the radiological safety of the facility employees or the public. These assessments are based on information submitted to the NRC by the license applicant. The license application contains detailed information on all aspects of the facility design and proposed operating conditions. This level of detail is necessary for the NRC to evaluate the impact of total plant operations on radiological safety associated with the possession and use of radioactive material. As required by NEPA, licensing reviews also include an evaluation of credible events that might cause the release of radioactive materials that could affect the environment.

Experience has shown that some plant operations require specific designs and controls in order to be safely conducted. Generic licensing guidance has been developed by the NRC for these operations.

Most licenses for fuel facilities include plant-specific requirements that are added to the license as license conditions. These conditions address radiation safety as opposed to requirements for chemical or industrial safety.

When the license is issued, the licensee is subject to the applicable requirements of NRC regulations in 10 CFR Parts 19, 20, 71, 30, 40, or 70 as appropriate to the class of materials; as well as specific license conditions and specific commitments contained in the license application. Compliance with these requirements is routinely determined by NRC inspection.

The scope of the NRC inspection program for these facilities (see Appendix A) has been designed to closely parallel license requirements. Many operations and chemical uses that could affect the overall health and safety of facility personnel or the public are not regulated by the NRC. Following the initial NRC comprehensive licensing review, the NRC does not further regulate those operations and chemical uses that the licensing review has determined to have no impact on radiological health and safety. These hazards have been considered by the NRC to be within the regulatory jurisdiction of OSHA or the EPA. Examples of operations, working conditions, or chemical uses at the Sequoyah facility that the NRC does not license, inspect, or have standards for include:

Chemical Use

- ° Hazards associated with the storage and use of industrial (non-radioactive) process chemicals prior to use in nuclear processes
- ° Hazards associated with the storage and use of miscellaneous industrial chemicals such as organic solvents, cleaners, glues, acids, bottled gases, or water treatment chemicals
- ° Hazards associated with nonradioactive chemicals used in testing and in analytical laboratories

Operations

- Electrical distribution (switchyards, etc.)
- Generation of elemental fluorine
- Steam generation in boilers
- Sewage treatment

Working Conditions

- Laboratory safety (except radiation safety)
- Measurement of airborne HF exposure or concentrations
- Measurement of airborne elemental fluorine
- Evaluation of asbestos hazard
- Evaluation of hexane exposures
- Evaluation of adequacy of respirators for chemicals
- Safety of X-ray equipment and nonionizing radiation such as microwave
- First aid for chemical exposures
- Electrical hazards
- Education and training in these areas for prevention, treatment, and emergency action

In the early 1970's NRC and OSHA entered into a cooperative agreement to exchange information when a hazardous condition or operation was noted during an inspection that was considered to be within the other agency's regulatory jurisdiction. The document titled, "General Guidelines for Interface Activities Between the NRC regional offices and the OSHA Office of General Industry Compliance Assistance," (IE Manual Chapter 1007), was most recently revised during 1984 and distributed to NRC and OSHA field offices. A copy of this agreement is included as Appendix B.

B. Occupational Safety and Health Administration (OSHA)

OSHA is responsible for regulating workplaces to protect workers from industrial hazards. This authority is derived from the Occupational Safety and Health Act (OSHAct), 29 USC. § 651 et seq which provides OSHA broad authority to establish "occupational safety and health standards." These are defined to include any "practices, means, methods, operations, or processes, reasonably necessary or appropriate to provide safe or healthful employment and places of employment." Standards in place include those contained in, among other places, 29 CFR 1910 "General Industry Standards." These are the standards OSHA has deemed necessary to discharge its responsibility to protect workers from operational industrial hazards. OSHA inspects workplaces for compliance with these standards. Workplaces are not licensed, and it is the responsibility of the management of the facility to determine the standards that apply to a particular operation and to comply with them. The employer also must report significant events to OSHA, including notification of major accidents, fatalities, and lost-time injuries.

To give a comparison of the magnitude of its responsibility and the resources available to perform it, OSHA has over 6 million workplaces to inspect with just 1200 inspectors. OSHA must establish inspection priorities that produce the maximum effect on overall safety at these facilities. This is accomplished by OSHA concentrating on serious accidents, allegations, generic problems, and problem facilities.

New standards and requirements may be established as necessary by OSHA under the OSHAct, if shown to be "reasonably necessary and appropriate to provide safe or healthful employment and places of employment." In establishing a standard, OSHA must show that there is a significant risk of harm to employees and that the standard will materially reduce the risk. Standards may apply to any workplace hazard, including hazards in manufacturing processes, to the extent that the hazard is not regulated by another federal agency (29 USC 653 (b)(1)). Thus, if a standard governing storage tanks for a hazardous chemical such

as hydrofluoric acid was shown to be necessary to protect workers, it could be issued under the OSHAct. Such a standard also might have the effect of protecting the general public. However, a standard to protect the general public could not be issued if it were not "reasonably necessary" for worker protection. For example, storage units can be and are regulated by OSHA, although standards specifically regulating tank construction and operation currently only address fire hazards associated with tanks containing flammable liquids (29 CFR 1910.106).

OSHA has standards dealing with a substantial number of toxic and hazardous nonradiological substances (29 CFR 1910 Subpart Z) that set forth employee exposure limits for these substances. OSHA also has established engineering and process controls and work practices to protect employees. Each standard typically contains reporting requirements, including requirements that releases be reported to OSHA [29 CFR 1910.1003(f), 1910.1004(f), 1910.1006(f)].

OSHA has also issued a "Hazard Communication Standard," 29 CFR 1910.1200, requiring employers to carry out a hazard communication program. This program requires users of toxic chemicals to provide a properly labeled container and a "materials safety data sheet" (MSDS) for each hazardous chemical used in the facility. Employees must be trained in chemical safety (including chemical emergencies), and the MSDS for each chemical must be made available to employees. Within the workplace itself, appropriate hazard warnings must be provided. It is understood that this program is to be implemented at the Sequoyah Fuels facility in July 1986.

Under Section 4(b)(1), however, OSHAct provisions do not apply to those employee working conditions for which another federal agency exercises statutory authority to prescribe or enforce standards or regulations affecting occupational safety and health.

The NRC has statutory licensing authority for regulating private uses of source material (including uranium hexafluoride), byproduct material, and special nuclear materials. As part of its licensing authority, NRC has issued regulations to limit employee exposure to radiation from these licensed sources. Under NRC's regulations, licenses for the handling of such materials are issued only if the applicant's proposed equipment, facilities, and procedures pertaining to the possession and use of the radioactive material are adequate to protect health and minimize danger to life and property. Thus, to the extent that the NRC license addresses working conditions, Section 4(b)(1) of the OSHA Act prohibits the application of OSHA regulations to the same hazards arising out of the working conditions.

C. Environmental Protection Agency (EPA)

EPA may regulate the design concepts of plants and processes, or health and safety hazards involved in the use of toxic chemical materials at NRC-licensed facilities under the Toxic Substances Control Act (TSCA). Before implementing this part of TSCA, the EPA must show that an imminent offsite hazard exists from the operation. To date, EPA has not exercised this authority.

D. Conclusion

Regulatory jurisdictions shared primarily between NRC and OSHA appear to be complete in providing for the onsite health and safety of plant employees. However, the Sequoyah Fuels accident has identified the need for NRC and OSHA to more definitively describe and agree upon the specific plant processes which will be regulated by each of the two agencies. The development of a formal memorandum of agreement or similar document would be appropriate.

IV. RESPONSIBILITIES FOR REGULATING OFFSITE HAZARDS ASSOCIATED WITH NORMAL OPERATIONS AT NRC-LICENSED URANIUM FUEL FABRICATION AND CONVERSION FACILITIES

A. Environmental Protection Agency

Among other things, EPA has the legislative authority and responsibility to develop "generally applicable" environmental standards for hazardous substances as a result of the EPA Reorganization Plan of 1969 and specific statutes such as the Clean Water Act (CWA), Clean Air Act (CAA), and Toxic Substances Control Act (TSCA). Specifically, in the case of radioactive materials, EPA has established offsite airborne radionuclide standards for uranium fuel cycle facilities (40 CFR 190) and uranium mill tailings (40 CFR 192) and has proposed standards for high-level and transuranic waste disposal (proposed 40 CFR 191) and national emission standards for hazardous air pollutants-standards for radionuclides (proposed 40 CFR 61). EPA regulates chemical discharges from these facilities through its National Pollution Discharge Elimination System (NPDES) permitting authority under the Clean Water Act.

B. Nuclear Regulatory Commission

To date, the NRC has incorporated 40 CFR 190 and most of 40 CFR 192 into its regulations and is inspecting applicable NRC licensees for compliance. The NRC also regulates liquid and airborne radioactive effluent in accordance with 10 CFR 20 or specific license conditions.

C. State Authorities

EPA and OSHA have enabling conditions in their legislation that permits a state to assume most of their federal responsibilities. Section 274 of the Atomic Energy Act permits a state to exercise authority under specific conditions, for licensing regulation, inspection, and enforcement of NRC or compatible rules under its Agreement State Program. This authority does not apply to facilities that possess more than 350 grams of special nuclear material (SNM).

In the Sequoyah Fuels case, the State of Oklahoma was not an NRC Agreement State and has assumed only limited aspects of EPA authorities. It has, however, enacted legislation that requires manufacturing plants to be permitted by the State. Under the permit, the plant is required to comply with applicable State environmental laws and other regulations assumed by the State from federal agencies. Currently, the Oklahoma State Department of Health (OSDH) conducts an offsite radiation surveillance program of air and water at the Sequoyah facility under a State Radiation Control Act, conducts offsite surveillance of airborne chemical effluents under a State implementation plan of the EPA Clean Air Act, and implements EPA's Resource Conservation and Recovery Act (RCRA) in the areas of handling and shipment of hazardous waste. Under State authority, the OSDH also regulates other industrial wastes that are not defined as hazardous. State authorities do not extend to onsite health and safety inspections of the Sequoyah Fuels facility.

D. Conclusion

Adequate legislative authority exists to provide health and safety regulation of potential offsite radiological and chemical hazards associated with normal operations at NRC-licensed uranium fuel fabrication and conversion facilities.

V. RESPONSIBILITIES FOR EMERGENCY PLANNING FOR NRC-LICENSED URANIUM FUEL FABRICATION AND CONVERSION FACILITIES

A. Onsite Emergency Planning

1. Nuclear Regulatory Commission (Radionuclides)

The NRC has the responsibility for reviewing and approving onsite radiological emergency plans for its licensees. These plans are established by licensees to provide an organized response to plant incidents with radiological consequences. The plans require some interaction with offsite contacts such as physicians, hospitals, fire departments, ambulance services and local authorities. The onsite plan is usually integrated with the offsite radiological contingency plan to provide a smooth transition if an onsite problem escalates to an offsite radiological incident.

2. Occupational Safety and Health Administration (Chemicals)

Most OSHA standards require employers to report to OSHA significant accidents, releases and lost-time injuries. Under the Hazard Communication Standard, 20 CFR 1910.1200, training programs and onsite emergency planning procedures must be established by May 1986 for each hazardous chemical manufactured or used in a facility.

3. Conclusion

Sufficient regulatory authority is available to provide adequate regulation of onsite emergency planning.

B. Offsite Emergency Planning

1. Nuclear Regulatory Commission (Radionuclides)

Since 1981, major fuel facilities like the Sequoyah Fuels facility have been required by the NRC to develop and implement

offsite radiological contingency plans. The requirement was placed on these licensees by order and made a condition of the license. Licensee plans are based on the radiological effects of a release of radioactive material. In 1984, the NRC Office of the Executive Legal Director (ELD) concluded that the toxic hazard potential of soluble uranium compounds may be taken into consideration in developing regulations to protect the public health and safety from the radiological effects of UF_6 . The ELD interpretation did not address the potential toxic hazards associated with HF resulting from an UF_6 release, nor did it address the toxic hazards of other chemicals that may be used onsite to support the processing of nuclear materials." (see Appendix C).

In SECY-86-99 of March 25, 1986, the staff has submitted to the Commission proposed amendments to 10 CFR Parts 30, 40, and 70 that would formally require emergency plans for uranium fuel fabrication and conversion facilities and for certain radioactive material licensees.

The proposed rule requires that emergency plans for licensees possessing uranium hexafluoride in excess of 50 kg in a single container or 1000 kg total include a description of the means and equipment for mitigating the consequences of each type of accident, including the means and equipment provided to protect workers onsite. The thrust of this provision is to protect offsite people by providing reasonable assurance that onsite measures can be taken to mitigate the offsite consequences.

In this regard, chemical hazards (such as HF) that could impact the onsite ability to mitigate offsite consequences must be considered.

Following the Sequoyah accident, concerns were raised about the failure to (1) forewarn persons living near the plant of potential offsite hazards and (2) quickly notify appropriate offsite officials and the public when the accident occurred. The proposed rule requires the licensee to give prompt notification

to appropriate offsite response organizations, provide these organizations with information on the situation and recommended actions, and assure that these officials have been offered instruction in advance. In addition, in order to ensure that offsite response organizations expected to respond to an accident have been consulted in the formulation of the plan, the licensee must allow such offsite organizations 60 days to comment on the plan and must provide these comments to the NRC:

The emergency plans are to address the licensee's response to the radiological hazards of an accidental release of source or special nuclear material and to "any associated hazards directly incident thereto." The toxic effects of HF associated with a UF_6 release would be required to be included in these plans.

SECY 86-99 notes that the staff has considered the need for (1) formal public information programs for people living close to licensed facilities and (2) formal notification of the potentially affected public in the event of an accident. The staff has concluded that the need for any actions of this type are best left to the local offsite emergency response organizations and officials who have jurisdiction and responsibility for protecting the people in the vicinity of the facility. The NRC encourages state and local authorities to consider the need for such actions and to work with the licensee on a case by case basis.

2. Environmental Protection Agency (Chemicals)

The EPA has recently developed a voluntary program to address the accidental release of acutely toxic chemicals. This program provides for companies processing hazardous chemicals to report on a voluntary basis the existence of these chemicals to local authorities and assist the communities in developing emergency response plans for dealing with chemical accidents. The EPA would assist in this planning where possible, but has indicated that it would prefer to avoid the regulatory approach of requiring emergency plans for all processors of hazardous chemicals. The

interim guidance for this "Chemical Emergency Preparedness Program," addresses various state and federal assistance available to local planners in developing a chemical emergency response plan.

3. Conclusion

The NRC requires radiological contingency plans to be developed and implemented at uranium fuel fabrication and conversion facilities. Currently these plans address only the radiological hazards associated with a release of nuclear materials. The staff's proposed rule on emergency planning for fuel cycle facilities (SECY-86-99) would require planning for any chemical hazards which are incident to the accidental release of nuclear materials. This regulatory approach, together with EPA's Chemical Emergency Preparedness Program, would provide completeness in federal regulation of the kind of release experienced at the Sequoyah Fuels facility.

VI. RESPONSIBILITIES FOR RESPONDING TO EMERGENCIES AT NRC-LICENSED URANIUM FUEL FABRICATION AND CONVERSION FACILITIES

A. Onsite

1. Nuclear Regulatory Commission (Radiological)

The NRC has the general authority to respond to onsite emergency radiological emergencies at these facilities. The authority permits the NRC to order mitigating actions and require measures to prevent recurrence of the incident. Under FEMA's Federal Radiological Emergency Response Plan (FRERP), the NRC is the cognizant Federal agency (CFA) that provides onsite federal support to NRC licensees during offsite emergencies.

2. Occupational and Safety Administration (Chemical)

The OSHA has the authority to respond to any onsite chemical or industrial emergency that could involve the safety of the workplace regardless of the offsite consequences of the emergency. The authority permits OSHA to require employers to take whatever actions necessary to mitigate hazards to employees as a result of the accident and to require corrective measures to prevent recurrence.

B. Offsite

1. Federal Emergency Management Agency (Radiological)

Under Executive Order 12241, September 29, 1980, the Federal Emergency Management Agency (FEMA) was directed to develop a coordinated federal plan for response to radiological emergencies. An interim plan was issued on October 22, 1980, (44 CFR 351) and a final draft plan submitted for concurrence of the eleven other affected agencies on September 12, 1984.

The operational plan, Federal Radiological Emergency Response Plan (FRERP) was published in final form on November 8, 1985. The FRERP is to be used by federal agencies in peacetime radiological emergencies and primarily concerns the offsite federal response in support of state and local governments with jurisdiction for the emergency. In this regard the FRERP:

- ° Provides the federal government's concept of operations based on specific authorities for responding to radiological emergencies;
- ° Outlines federal policies and planning assumptions that underlie this concept of operations and on which federal agency response plans (in addition to their agency-specific policies) were based; and
- ° Specifies authorities and responsibilities of each federal agency that may have a significant role in such emergencies.

Under the FRERP, FEMA is responsible for coordinating the Federal response to all radiological emergencies that require a significant, multiagency presence. Coordination is achieved at the national level by FEMA through use of FEMA's Emergency Support Team. Notification to activate the plan is made by contacting the FEMA Emergency Information and Coordinating Center (EICC) in Washington, D.C.

a. Nuclear Regulatory Commission

For accidents at NRC-licensed facilities, this notification is based on guidance provided in the NRC Incident Response Plan. The notification is made through the NRC Incident Response Center in Bethesda, Maryland.

According to Section IV of the FRERP, once the plan is activated, NRC's response mission is:

".... the NRC would be the cognizant federal agency (CFA) and is responsible for monitoring the licensee to ensure that protective action recommendations are being made to offsite authorities in a timely manner. In addition, the NRC will support its licensees and offsite authorities, including confirming the licensee's recommendations to offsite authorities, and will keep the media informed of the NRC's knowledge of the status of the incident. The NRC is also responsible for the development, coordination, and presentation (in conjunction with FEMA) of federal protective action recommendations and for keeping other federal agencies and entities informed of the status of the incident.

Consistent with NRC's agreement to participate in the Federal Radiological Monitoring and Assessment Plan (FRMAP), the NRC may also be called upon to assist in federal radiological monitoring and assessment activities during incidents for which it is not the CFA."

b. Department of Energy (DOE)

The DOE is the responsible offsite authority that provides federal radiological monitoring and assessment assistance during radiological emergencies at NRC-licensed facilities.

2. Environmental Protection Agency/National Contingency Plan (Hazardous Chemicals)

Under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA or "Superfund") and Section 311 of the Clean Water Act, as amended (CWA), the EPA has developed the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300). This plan, generally referred to as the National Contingency Plan (NCP) was developed to provide coordinated federal and state agency response to "releases or substantial releases of hazardous substances into the environment, and releases or substantial threats of releases of pollutants or contaminants that may present an imminent and substantial danger to public health or welfare."

Under Subpart B, Section 300.22 of the plan, federal and state response to radiological emergencies under the plan is exempted in favor of the Federal Radiological Emergency Response Plan (FRERP). The NCP, however, is effective for releases of other (non-radioactive) hazardous chemicals from NRC-licensed facilities.

C. Conclusion

Federal contingency plans are in place to provide coordinated emergency response to offsite radiological and chemical releases from NRC-licensed facilities.

APPENDIX A

NRC INSPECTION PROGRAM FOR URANIUM HEXAFLUORIDE FACILITIES

APPENDIX A

INSPECTION MODULES USED FOR INSPECTION OF UF₆ CONVERSION FACILITIES

<u>Module Number</u>	<u>Title</u>
83822	Radiation Protection <ol style="list-style-type: none"> 1. Radiation Protection Procedures 2. Instruments and Equipment 3. Exposure Controls 4. Posting and Labeling 5. Surveys 6. Notification and Reports
88005	Management Organization and Controls <ol style="list-style-type: none"> 1. Organizational Structure 2. Procedure Controls 3. Reviews and Audits 4. Safety Committees 5. Quality Assurance Programs
88010	Operations Training/Retraining <ol style="list-style-type: none"> 1. New Employee Indoctrination 2. Ongoing Training 3. Retraining
88020	Operating Review <ol style="list-style-type: none"> 1. Conduct of Operations, Facility, Modifications and Changes, Safety Limits/LCOS 2. Housekeeping 3. Fuel Handling and Storage
88025	Maintenance/Surveillance Testing <ol style="list-style-type: none"> 1. Maintenance 2. Surveillance Testing 3. Calibrations
88035	Radioactive Waste Management <ol style="list-style-type: none"> 1. Liquid Effluents 2. Airborne Effluents 3. Records and Reports 4. Effluent Monitoring Instruments 5. Procedures 6. Radioactive Solid Waste 7. Waste Burial 8. Storage of Radioactive Liquid Waste
86740	Transportation of Radioactive Materials <ol style="list-style-type: none"> 1. Routine Maintenance of Reusable Packages 2. Packaging and Transportation Activities

Module Number

Title

88045

Environmental Protection

1. Management Controls
2. Quality Control/Analytical Measurements
3. Program Implementation

88050

Emergency Preparedness

1. Off Site Support Agencies
2. Emergency Plans, Procedures, Facilities and Equipment
3. Tests and Drills
4. Fire Protection

APPENDIX B
OSHA/NRC INTERFACE ACTIVITIES

020 101125421

U.S. Department of Labor

Occupational Safety and Health Administration
Washington, D.C. 20210

Reply to the Attention of:



JAN 15 1985

MEMORANDUM FOR: REGIONAL ADMINISTRATORS

FROM: JOHN B. NILES, JR., DIRECTOR
DIRECTORATE OF FIELD OPERATIONS

SUBJECT: OSHA/NRC Interface Activities and Related Information

For information and guidance, we are forwarding material relating to interface activities between the Nuclear Regulatory Commission (NRC) and OSHA. This material should assist you when situations arise as addressed in the POM, Chapter III, paragraph D.6.e., pages III-33 and 34, subject: Preemption by another agency.

Last year, discussions were held with NRC, and both agencies reaffirmed procedures for interface activities. Attachment 1 is a copy of NRC's Chapter 1007 of their Inspection and Enforcement Manual, which delineates the procedures. Attachment 2 is a listing of the NRC Regional Offices with addresses, names and telephone numbers. Attachment 3 is a copy of an NRC Memo to their regions, dated November 2, 1984, subject: OSHA Interpretation: Beards and Tight-Fitting Respirators.

Interface between OSHA and NRC is conducted at the Regional Office level. State plan States should be encouraged similarly to coordinate referrals to and from NRC through the OSHA Regional Office. Any referral from NRC dealing with situations in State plan State jurisdiction should be referred by the Regional Office to the State for appropriate action. The Office of General Industry Compliance Assistance should be contacted whenever jurisdictional issues in either Federal enforcement or State plan States arise that cannot be resolved at the Regional level.

A copy of this memorandum and the attached NRC guidance should be provided to each State designee, and the policies established discussed, as appropriate. Should you have any questions, contact Janet Sprickman in the Directorate's Office of General Industry Compliance Assistance at FTS 523-8031.

Attachments

Info: Training Institute



UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
Washington, D.C. 20555

INSPECTION AND ENFORCEMENT MANUAL

DQASIP

CHAPTER 1007

INTERFACING ACTIVITIES BETWEEN REGIONAL OFFICES AND OSHA

Director, Division of Quality Assurance, Safeguards, and Inspection Programs. Coordinates the development and resolution of policy matters concerning operational relations with the Office of General Industry Compliance Assistance, OSHA.

1007-01

PURPOSE

This manual chapter establishes a method for communicating occupational safety and health information between the Regional Offices and the appropriate organization of OSHA (Occupational Safety and Health Administration of the U.S. Department of Labor).

1007-02

OBJECTIVES

02.01

To ensure that information concerning events, unsafe conditions and other matters dealing with occupational safety and health are referred to the proper agency for action.

02.02

To provide policy and interface guidelines for the exchange of information at the Regional level.

1007-03

RESPONSIBILITIES AND AUTHORITIES

03.01

Director, Division of Quality Assurance, Safeguards, and Inspection Programs. Coordinates the development and resolution of policy matters concerning operational relations with the Office of General Industry Compliance Assistance, OSHA.

03.02

Regional Administrators

- Exchange information concerning events, unsafe conditions, and other matters with OSHA as appropriate.
- Use the information provided by OSHA as appropriate; this may include evaluation and analysis of the information and onsite followup.

1007-04

BASIC REQUIREMENTS

04.01

General Guidelines for Interface Activities are contained in the Appendix to this Manual Chapter.

04.02

Communications will generally be on a Regional level. The information exchanged between NRC elements and OSHA should be commu-

INTERFACING ACTIVITIES BETWEEN
REGIONAL OFFICES AND OSHA

notated orally. Formal reports of events or conditions by both NRC and OSHA are not encouraged. Regions may document safety matters of concern in a memorandum to file.

04.03

Regional personnel shall

- a. Notify OSHA Regional Offices of events and conditions believed to have industrial safety significance in accordance with the guidelines of the Appendix.
- b. Receive and analyze information reported by OSHA in accordance with the guidelines of the Appendix.
 1. Information should receive prompt evaluation. Appropriate portions of Inspection Procedures 90712 and 93701 describe an acceptable method for this evaluation.
 2. Perform onsite followup as appropriate to initiate or verify proper licensee corrective action. Report significant finding in inspection reports.
- c. Inform the Division of Quality Assurance, Safeguards, and Inspection Programs of apparent inaction (OSHA or licensee) regarding events and conditions reported to OSHA.
- d. Inform the Division of Quality Assurance, Safeguards, and Inspection Programs of disagreements between Regional Offices and OSHA.

notification indicated in c and d above should be made by memorandum with a copy to the cognizant Headquarters Division in the Office of Inspection and Enforcement

END

APPENDIX

**GENERAL GUIDELINES FOR INTERFACE ACTIVITIES
BETWEEN THE NRC REGIONAL OFFICES AND THE
OSHA OFFICE OF GENERAL INDUSTRY COMPLIANCE ASSISTANCE**

1. The NRC Regional Offices are responsible for assessing radiological health and safety in work areas for NRC-licensed facilities and NRC licensees. This also includes inspection of security and environmental protection matters affecting NRC licensed facilities and activities.
2. OSHA has responsibility for nonradiological health and safety in the work areas of NRC-licensed facilities and NRC licensees, including inspections.
3. OSHA covers employee exposures from all radiation sources not regulated by NRC. Examples include x-ray equipment, accelerators, accelerator-produced materials, electron microscopes, and betatrons, and naturally occurring radioactive materials such as radium.
4. NRC Regional Office personnel will inform the appropriate OSHA Regional Office of matters in the OSHA area of responsibility which come to their attention during the conduct of NRC activities. The following are examples of matters that would be reported to OSHA:
 - a. Serious injuries or fatalities of workers.
 - b. The existence of safety and health hazards to workers, including radiological hazards from activities not licensed by the NRC.

NOTE: When such instances occur within OSHA State Plan States' jurisdiction, the OSHA Regional Office will refer the matter to the State for appropriate action.

5. OSHA Regional Offices will inform the appropriate NRC Regional Office of matters which are in the purview of NRC when these come to their attention during federal or State safety and health inspections associated with NRC-licensed activities. The following are examples of matters that would be reported to the NRC:
 - a. Lax security control or work practices that would impact on radiological health and safety.
 - b. Improper posting of radiation areas.
 - c. Allegations by licensee employees of NRC license or regulation violations.
6. The NRC and OSHA will not normally conduct joint inspections at NRC-licensed facilities. However, under certain conditions, such as investigations resulting from reported activities as discussed in

APPENDIX C

LEGAL OPINION ON TOXICITY OF UF_6