



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011-4005

September 26, 2002

Mr. Robert E. Link, Site Manager  
Framatome ANP, Inc.  
2101 Horn Rapids Road  
Richland, Washington 99352

SUBJECT: NRC INSPECTION REPORT 70-1257/02-06

Dear Mr. Link:

On September 9-13, 2002, the NRC conducted a routine inspection at the Framatome ANP facility in Richland, Washington. The purpose of the inspection was to determine whether activities authorized by your license were conducted safely and in accordance with NRC requirements. The areas examined during the inspection included a review of the program for operational safety and environmental protection. Within these areas, the inspection consisted of a selective examination of procedures, representative records, equipment, facilities and interviews with personnel. An exit briefing was conducted on September 13, 2002, with members of your staff.

Activities conducted at the facility were generally characterized by implementation of effective programs in the area of operational safety and environmental protection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room **or** from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Dr. D. Blair Spitzberg at (817) 860-8191 or Wayne Britz at (817) 860-8194.

Sincerely,

/RA/

Dwight D. Chamberlain, Director  
Division of Nuclear Materials Safety

Docket No.: 70-1257  
License No.: SNM-1227

Enclosure:  
NRC Inspection Report  
70-1257/02-06

Framatome ANP, Inc.

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cc w/enclosure:

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 RIV Materials Docket File

DOCUMENT NAME: Draft: S:\dnms\fcdb\wlb\20125706.wpd      Final: R:\\_DNMS\

RIV:DNMS:FCDB	C:FCDB	D:DNMS
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**ENCLOSURE**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 70-1257  
License No.: SNM-1227  
Report No.: 70-1257/02-06  
Licensee: Framatome ANP, Inc.  
Facility: Framatome ANP, Inc.  
Location: Richland, Washington  
Dates: September 9-13, 2002  
Inspector: Wayne L. Britz, Fuel Cycle Facility Inspector  
Fuel Cycle/Decommissioning Branch  
Approved By: D. Blair Spitzberg, Ph.D., Chief  
Fuel Cycle/Decommissioning Branch  
Attachment: Supplemental Inspection Information

## **EXECUTIVE SUMMARY**

Framatome ANP, Inc.  
NRC Inspection Report 70-1257/02-06

This routine, announced inspection included a review of selected aspects of the licensee's program for operational safety and environmental protection.

### Operational Safety (88020; TI 2600/003)

- Operations involving the processing of special nuclear material were in accordance with established safety requirements (Section 1).

### Environmental Protection (88045)

- Gaseous and liquid uranium radioactive releases to the environment were a small fraction of the 10 CFR Part 20 limits and resulted in doses well below public dose limits. The technetium content in the radioactive liquid effluents discharged have been a significant fraction of the sewer release limits and are being managed by the licensee to assure the limits are not exceeded. The calculated dose to the public from the gaseous radioactive releases to the environment were a small fraction of the 10 CFR Part 20 dose limits to the public. The licensee does not calculate a dose to the public from the liquid radioactive releases to the sewer system because the dilution of the releases in the City of Richland sewer system and the Columbia River result in an insignificant contribution to a potential dose pathway. The environmental program audits were thorough and corrective actions were tracked to resolution. The licensee was adequately implementing the environmental monitoring program in accordance with the license conditions (Section 2).

### Follow up (92701)

- The inspector reviewed the status of the response to NRC Reactive Team inspection Report 70-1257/0203 dated June 13, 2002, and Notice of Violation and Proposed Imposition of Civil Penalty dated August 28, 2002. The implementation and effectiveness of corrective actions identified in the licensee's action plan will be reviewed in detail during a future inspection.

## Report Details

### Summary of Plant Status

The dry conversion facility (DCF), fuel pellet production, fuel rod downloading, engineering laboratory operations (ELO), lagoon uranium recovery (LUR), ammonia recovery facility (ARF), gadolinium recovery, modular extraction/recovery facility (MERF), and the solids processing facility (SPF) were in operation. The Line 2 ammonium diuranate (ADU) recovery process and the solid waste uranium recovery (SWUR) were not in operation.

## **1 Operational Safety (88020; TI2600/003)**

### 1.1 Inspection Scope

The inspector reviewed general facility operations to verify adherence to operational safety requirements documented in the license conditions and operating procedures.

### 1.2 Observations and Findings

The inspector observed general operations in the Speciality Fuels Building, Dry Conversion Facility and the UO<sub>2</sub> Building. Work operations were observed and discussed with personnel. Criticality safety analyses, criticality safety specifications and procedures were reviewed for the powder prep area in the Speciality Fuels Building, and the MOP (miscellaneous uranium recovery system oxidized powder) Powder Dissolver Facility and UNH (uranyl nitrate) Reprocessing in the UO<sub>2</sub> Building. The inspector observed control room operations in the DCF over two shifts. The control room operations and the shift turnovers appeared adequate. Areas where maintenance was performed were observed for their proper postings, work planning, maintenance and radiation work permits and protective clothing as required. The actions of radiation protection and operations personnel to the operational problems with the pump for the stack and personnel air samplers at work stations in the Speciality Fuels Building were observed. The actions were observed to be appropriate for the operational situation. The removal of portions of the ammonium diuranate (ADU) Line 2 was reviewed during a portion of the removal operation. The inspector found the operations to be in conformance with the regulations and procedures.

The inspector reviewed the changes to be made in the UO<sub>2</sub> and DCF buildings. The changes are designed to improve operations and the flow of material. The changes involve either removal, modification and/or relocation of equipment associated with the ADU calciner, miscellaneous uranium recovery system ion exchange, powder preparation area, lube blend area, powder test facility, powder download area, waste storage area, maintenance shop and high efficiency particulate filter (HEPA) filter cleaning area.

The plans for the addition of a process line to receive low enriched uranium down-blended from Department of Energy high enriched uranium at the Richland facility was reviewed. The process is expected to begin construction in 2003 and operate in April 2004. The process will be installed in the existing UO<sub>2</sub> building with additional storage facilities to be

added. The higher radioactivity of the down-blended uranium will require additional design considerations to control worker exposures. The process lines are currently in the design process and will be reviewed by the NRC when submitted as a license amendment request.

The physical condition of the safety equipment and the housekeeping in the DCF and UO<sub>2</sub> building were observed to be adequate.

### 1.3 Conclusions

Operations involving the processing of special nuclear material were in accordance with established safety requirements.

## **2 Environmental Protection (88045)**

### 2.1 Inspection Scope

The environmental monitoring program was reviewed to assess the effectiveness of the licensee's program to monitor and maintain compliance with applicable requirements.

### 2.2 Observations and Findings

The inspector reviewed the environmental surveillance program required by Section 2.7.5, Environmental Protection Inspections, and Section 5.2, *Environmental Monitoring*, Part I of the license, and the licensee's Safety Manual, EMF-30, Chapter 4.0, *Environmental Standards*. The review included the licensee's implementation of the program, facility tours, procedure reviews, records of environmental sampling and internal audit results.

The HEPA filters and sample lines were discussed with the responsible engineer. Sample line rerouting for more direct sampling was completed since a previous environmental program inspection. License Condition 5.1.1.2, Final HEPA Filter Protection, was discussed and the records of the required monthly pressure differential readings across the final HEPA filters were reviewed. The differential pressure readings were within the license condition requirements. The reading data had been entered into data loggers which recorded the data and bar codes at each filter location.

The inspector's review of environmental records included: gaseous and liquid effluent monitoring reports, waste effluent monitoring and sampling for the wastes to the Richland Wastewater Treatment Facility, sludge and effluent sampling at the City of Richland sewer system, soil and forage samples, ambient air sampling, lagoon liner sampling and groundwater sampling from the wells. Sludge samples which were previously analyzed by an offsite vendor were again being analyzed at the licensee's laboratory after the licensee's laboratory analytical problem with a chemical interference was resolved. 10 CFR Part 70.59, *Effluent monitoring reporting requirements*, requires the licensee to sample and submit reports to the NRC for both solid and liquid effluents released from the site. The gaseous effluents analyzed contained measurable uranium and the liquid effluents contained uranium and technetium. Sample results for the last half of 2001 and

the first half of 2002 concluded that the licensee was in compliance with applicable discharge limits. There were no significant changes during the past year in the results of uranium measurements in the soil, forage, ambient air and radioactive wastes to or at the Richland Wastewater Treatment Facility. The technetium in the liquid wastes have been increasing depending on the type and amount of feed material being processed. The sampling frequencies were performed in accordance with License Condition 5.2, *Environmental Monitoring*.

The inspector reviewed the licensee's public dose assessment to ensure that licensed site operations did not result the radioactive gaseous and liquid environmental releases exceeding a total effective dose equivalent of 100 millirem per year to individual members of the public as specified in 10 CFR 20.1301(a), *Dose Limits for Individual Members of the Public*, and a total effective dose equivalent in excess of 10 mrem per year from air emissions as specified in 10 CFR 20.1101(d), *Radiation Protection Programs*. The licensee's 2001 ALARA Report, EMF-2748, dated June 10, 2002, reported a calculated maximum gaseous effluent dose to the public of 0.012 mrem. The radioactive liquid effluent is discharged via the site to the City of Richland sewer system where the waste is processed and discharged to the Columbia River. The uranium content in the radioactive liquid effluents discharged were either undetectable or a small fraction of the sewer release limits of 10 CFR Part 20. The technetium content in the radioactive liquid effluents discharged have been a significant fraction of the sewer release limits and are being managed by the licensee to assure the limits are not exceeded. The calculated dose to the public from the gaseous radioactive releases to the environment were a small fraction of the 10 CFR Part 20 dose limits to the public. The licensee does not calculate a dose to the public from the liquid radioactive releases to the sewer system because the dilution of the releases in the City of Richland sewer system and the Columbia River result in an insignificant contribution to a potential dose pathway.

The inspector reviewed the licensee's lagoon liner leakage monitoring logs and reports. There was one reportable leak in an upper lagoon liner. The licensee reported a confirmed leak in the lagoon's three upper liner which was discovered on April 19, 2002. The hole was patched and the leakage was stopped. The tear in the liner appears to have previously self-sealed and was disturbed during the lagoon inventory removal activities. About 1 gallon of liquid was pumped from between the liners. No liquids were removed during routine pumping the previous 2 months. No liquid was found under the lower liner. Lagoon Three has since been drained of all liquid as part of the lagoon cleanup and removal process. The licensee reported the leak in an upper liner to the NRC as required by License Condition 5.1.3 *Process Chemical Lagoon Management System*. The licensee was performing leakage monitoring of the lagoons as required by the environmental program.

The licensee's environmental audit program was reviewed and was consistent with License Condition 2.6.4, *Environmental Protection Inspections*. The environmental program audits were thorough and corrective actions were tracked to resolution.

### 2.3 Conclusions

Gaseous and liquid uranium radioactive releases to the environment were a small fraction of the 10 CFR Part 20 limits and resulted in doses well below public dose limits. The technetium content in the radioactive liquid effluents discharged have been a significant fraction of the sewer release limits and are being managed by the licensee to assure the limits are not exceeded. The calculated dose to the public from the gaseous radioactive releases to the environment were a small fraction of the 10 CFR Part 20 dose limits to the public. The licensee does not calculate a dose to the public from the liquid radioactive releases to the sewer system because the dilution of the releases in the City of Richland sewer system and the Columbia River result in an insignificant contribution to a potential dose pathway. The environmental program audits were thorough and corrective actions were tracked to resolution. The licensee was adequately implementing the environmental monitoring program in accordance with the license conditions.

### **3 Follow up (92701)**

The inspector reviewed the status of the response to NRC Reactive Team Inspection Report 70-1257/0203 dated June 13, 2002, and Notice of Violation and Proposed Imposition of Civil Penalty dated August 28, 2002. The licensee had developed an action plan and status report which contained the topical headings of 1) management and supervisory accountability, 2) worker training and qualification, 3) procedural work-arounds, 4) adequacy of root cause evaluations, 5) requirements flow-down, and 6) configuration management system adequacy. The inspector discussed the status of the items with the licensee. The implementation and effectiveness of the actions identified in the action plan will be reviewed in detail during a future inspection.

### **4 Exit Meeting Summary**

The inspector presented the inspection results to members of licensee management at the conclusion of the inspection on September 13, 2002. The licensee did not identify any of the information discussed at the meeting as proprietary.

**ATTACHMENT**

**PARTIAL LIST OF LICENSEE PERSONNEL CONTACTED**

D. A. Adkisson, Richland Operations Manager  
R. K. Burklin, Manager, Radiation Protection  
R. E. Link, Site Manager  
L. J. Maas, Manager, License and Compliance  
C. D. Manning, Criticality Safety, Regulatory Compliance  
J. J. Payne, Manager, Chemical Operations  
T. J. Tate, Radiation Protection Supervisor  
L. O. Washington, Supervisor, Ceramics

**INSPECTION PROCEDURES USED**

88020; TI 2600/003	Operational Safety
88045	Environmental Protection
92701	Follow up

**OPEN, DISCUSSED AND CLOSED ITEMS**

Opened

None

Discussed

70-1257/0203-01	VIO	Failure to maintain double contingency control for criticality safety
70-1257/0203-02	VIO	Failure to maintain configuration control for criticality safety
70-1257/0203-03	VIO	Operator failure to follow procedure requiring drum inspection and management failure to provide adequate supervision
70-1257/0203-04	VIO	Failure to identify necessary criticality safety controls in the CSA and CSS
70-1257/0203-05	VIO	Failure to include CSA and CSS requirements in the SOP

Closed

None

### LIST OF ACRONYMS USED

ADAMS	agencywide documents access and management systems
ADU	ammonium diuranate
ARF	ammonia recovery facility
CFR	Code of Federal Regulations
DCF	dry conversion facility
ELO	Engineering Laboratory Operations Building
HEPA	high efficiency particulate air
LUR	Lagoon Uranium Recovery
MERF	modular extraction/recovery facility
MURS	miscellaneous uranium recovery system
SPF	Solids Processing Facility
SS&L	Safety, Security and Licensing
SWUR	Solid Waste Uranium Recovery facility
UF <sub>6</sub>	uranium hexafluoride
UNH	uranyl nitrate
UO <sub>2</sub>	uranium dioxide