

April 2, 2003

**MEMORANDUM TO:** Docket File 70-1201

**FROM:** Julie Olivier, Project Manager */RA/*  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety and Safeguards

**SUBJECT:** ENVIRONMENTAL ASSESSMENT FOR THE RENEWAL  
FRAMATOME ANP, INC., LYNCHBURG, VIRGINIA

The NRC is considering renewal of NRC Special Nuclear Material License SNM-1168 for Framatome Advanced Nuclear Power, Inc. in Lynchburg, VA. An Environmental Assessment (EA) was performed by the NRC staff in support of its review of Framatome's renewal request, in accordance with the requirements of 10 CFR Part 51.

By application dated March 28, 2002 (ADAMS Accession No. ML020940468), Framatome Advanced Nuclear Power (FANP) requested the renewal of license Materials License SNM-1168. An Environmental Report was submitted in a letter dated March 28, 2002 (ADAMS Accession No. ML020930031). The NRC published a Federal Register Notice on August 9, 2002 (67 FR51894) with a Notice of Opportunity for Hearing on the proposed action. No requests for a hearing were received.

Based on an evaluation of the environmental impacts of the renewal request, the NRC has determined that the proper action is to issue a Finding of No Significant Impact.

Attachment: Environmental Assessment for renewal of SNM-1168

April 2, 2003

**MEMORANDUM TO:** Docket File 70-1201

**FROM:** Julie Olivier, Project Manager **/RA/**  
Fuel Cycle Facilities Branch  
Division of Fuel Cycle Safety and Safeguards

**SUBJECT:** ENVIRONMENTAL ASSESSMENT FOR THE RENEWAL  
FRAMATOME ANP, INC., LYNCHBURG, VIRGINIA

The NRC is considering renewal of NRC Special Nuclear Material License SNM-1168 for Framatome Advanced Nuclear Power, Inc. in Lynchburg, VA. An Environmental Assessment (EA) was performed by the NRC staff in support of its review of Framatome's renewal request, in accordance with the requirements of 10 CFR Part 51.

By application dated March 28, 2002 (ADAMS Accession No. ML020940468), Framatome Advanced Nuclear Power (FANP) requested the renewal of license Materials License SNM-1168. An Environmental Report was submitted in a letter dated March 28, 2002 (ADAMS Accession No. ML020930031). The NRC published a Federal Register Notice on August 9, 2002 (67 FR51894) with a Notice of Opportunity for Hearing on the proposed action. No requests for a hearing were received.

Based on an evaluation of the environmental impacts of the renewal request, the NRC has determined that the proper action is to issue a Finding of No Significant Impact.

Attachment: Environmental Assessment for renewal of SNM-1168

**DISTRIBUTION (w/ encl):** FCFB r/f MLamastra Schidakel, OGC  
DSeymour, RII

ADAMS ACCESSION NUMBER: ML030940720

C:\ORPCheckout\FileNET\ML030940720.wpd

<b>OFC</b>	FCFB		FCFB		OGC		FCFB		FCFB	
<b>NAME</b>	JOlivier		JMuskiewicz		S. Treby		LRoché		S. Frant	
<b>DATE</b>	03/19/03		03/19/03		03/27/03		03/28/03		04/2/03	

**OFFICIAL RECORD COPY**

# ENVIRONMENTAL ASSESSMENT FOR THE RENEWAL OF LICENSE SNM-1168

## INTRODUCTION

By application dated March 28, 2002, Framatome Advanced Nuclear Power (FANP) requested the renewal of Materials License SNM-1168. An Environmental Report was submitted in a letter dated March 28, 2002. The FANP facility in Lynchburg, VA, conducts three types of operations: producing fuel assemblies for use in commercial light-water reactors, support activities for nuclear reactor field service operations, and general manufacturing. The activity covered under license SNM-1168 is the fabrication of fuel assemblies. The scope of the NRC review for this environmental assessment included activities authorized under license SNM-1168. In addition, other activities which could potentially affect licensed activities were evaluated, such as chemical usage for non-radiological activities adjacent to the special nuclear material (SNM) processing area.

## REVIEW SCOPE

In accordance with 10 CFR Part 51, this EA serves to (1) present information and analysis for determining whether to issue a Finding of No Significant Impact (FONSI) or to prepare an Environmental Impact Statement (EIS); (2) fulfill the NRC's compliance with the National Environmental Policy Act (NEPA) when no EIS is necessary; and (3) facilitate preparation of an EIS if one is necessary. Should the NRC issue a FONSI, no EIS would be prepared and the license amendment would be granted.

## PROPOSED ACTION

The proposed action is the renewal of license SNM-1168, which is necessary for FANP Lynchburg to continue operations. Principal activities in the fabrication facility include the processing of low-enriched uranium ( $\leq 5.1\%$ ), received as  $UO_2$  pellets. Uranium pellets are received and then transported to a pellet vault after the receipt inspection process is completed. The fuel pellets are then inserted into rods, which are then assembled into fuel bundles. Finished fuel bundles are then packaged and loaded onto truck transport for delivery to the receiving utility. Other activities conducted in conjunction with nuclear fuel fabrication include: fabrication of poison rods, download of finished fuel bundles and rods, repair of returned fuel assemblies, laboratory operations and waste disposal operations.

## NEED FOR THE PROPOSED ACTION

The FANP Lynchburg facility is one of several facilities that fabricate fuel elements for light-water reactors. There is continuing demand to meet the needs for operating reactors. Because FANP Lynchburg is a supplier of fuel assemblies for the reactors, denial of license renewal would necessitate expansion of similar activities at another existing fuel fabrication facility or the construction and operation of a new plant. Framatome assembles and ships approximately 450 fuel assemblies per year (40-50 truckloads).

Attachment

## ALTERNATIVES TO THE PROPOSED ACTION

The NRC staff considered one alternative to the proposed action which is renewal of the license to authorize decommissioning only.

Under this alternative, fuel fabrication would not be authorized. Instead, the license would be renewed only to authorize decommissioning. There would be a transition to site-wide decommissioning activities which have not been identified at this time, but would be assessed when FANP submits a site-wide decommissioning plan. A deadline for submitting the plan would be assigned.

## AFFECTED ENVIRONMENT

### Site Description

The facility is located on an approximately 70 acre site in Campbell County, Virginia, approximately 4 miles from the Lynchburg city limits. The location of the facility is identified as LMF on Figure 1. The site lies on a river bend bounded on three sides by the James River and on the southeastern side by Mt. Athos. The topography of the plant site is generally rolling with gentle slopes. The dominant topographic feature of the site is a hill located approximately at the center of the property, the crest of which rises to 211 m (693 ft) mean sea level (MSL). The site includes a large area of relatively flat floodplain adjacent to the river. The highest point in the vicinity of the site is the top of Mt. Athos, where the elevation is 271 m (890 ft) MSL.

The site is adjacent to the BWX Technologies plant site, Materials License SNM-42. Figure 2 shows the facility location relative to BWX Technologies.

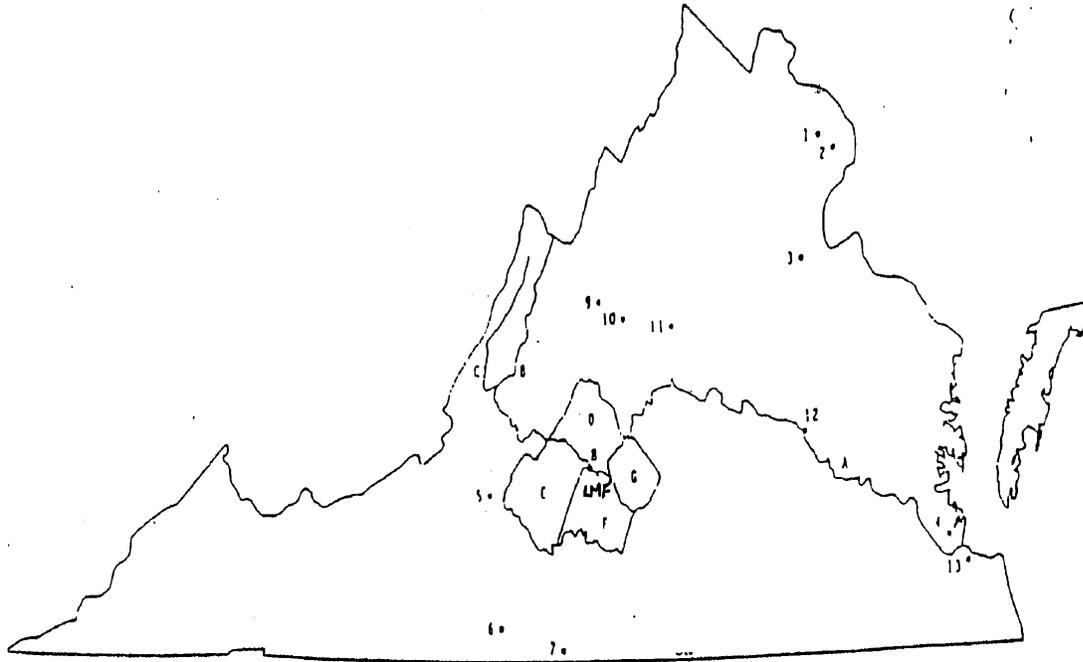
### Climatology

The climate of the Lynchburg area is influenced by cold and dry polar continental air masses in the winter and warm and humid gulf maritime air masses in the summer. The mean temperature is about 13.7°C (56.7°F) with normal average temperatures ranging from 24.6°C (76.3°F) in July to 3.6°C (38.5°F) in December (Ref. 1). Rainfall amounts at Lynchburg can be expected to reach 102.4 cm (40.3 in) in any given year. The monthly rates of rainfall are nearly uniform except for a slightly higher rate during the summer months. Snowfall in the Lynchburg area generally occurs between the months of December and March. The mean yearly snowfall total is 49.3 cm (19.4 in). Winds are predominately from the southwest with a mean speed of 12.8 km/h (8.0 mph) (Ref. 2). Mean relative humidity values at 7:00 a.m., 1:00 p.m., and 7:00 p.m. are 78.1, 51, and 62% respectively. Heavy fog can be expected to occur at the site on the average of 40 days per year (Ref. 1).

Extremes in weather conditions in the area are rare. Severe weather at the site is generally limited to thunderstorms, with a low probability of tornados. Climatology data shows that the mean number of thunderstorms occurring in Lynchburg is 22 per year (Ref. 3).

Data obtained from the National Oceanic and Atmospheric Administration (NOAA) indicates that between 1950 and 1995 there were, on average, 6 tornadoes per year in the state of Virginia. Of those tornadoes, 2 per year were categorized as "strong-violent", equating to an F2 to F5 rating on the Fujita Tornado Damage Scale. NOAA data showed that between 1950 and 1995, tornadoes occurred at a rate of 1.6 tornadoes per year per 10,000 square miles in Virginia. This equates to an annual probability of 1.9 E-5 per year for the site (Ref. 3).

Figure 1 - Facility Location in the Commonwealth of Virginia



- 1. ARLINGTON
- 2. ALEXANDRIA
- 3. FREDERICKSBURG
- 4. NEWPORT NEWS
- 5. ROANOKE
- 6. MARTINSVILLE
- 7. DANVILLE
- 8. LYNCHBURG
- 9. STAUNTON
- 10. WAYNESBORO
- 11. CHARLOTTESVILLE
- 12. RICHMOND
- 13. NORFOLK

- A. JAMES RIVER
- B. COWPASTURE RIVER
- C. JACKSON RIVER
- D. AMHERST COUNTY
- E. BEDFORD COUNTY
- F. CAMPBELL COUNTY
- G. APPOMATTOX COUNTY

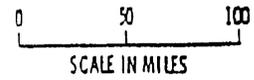
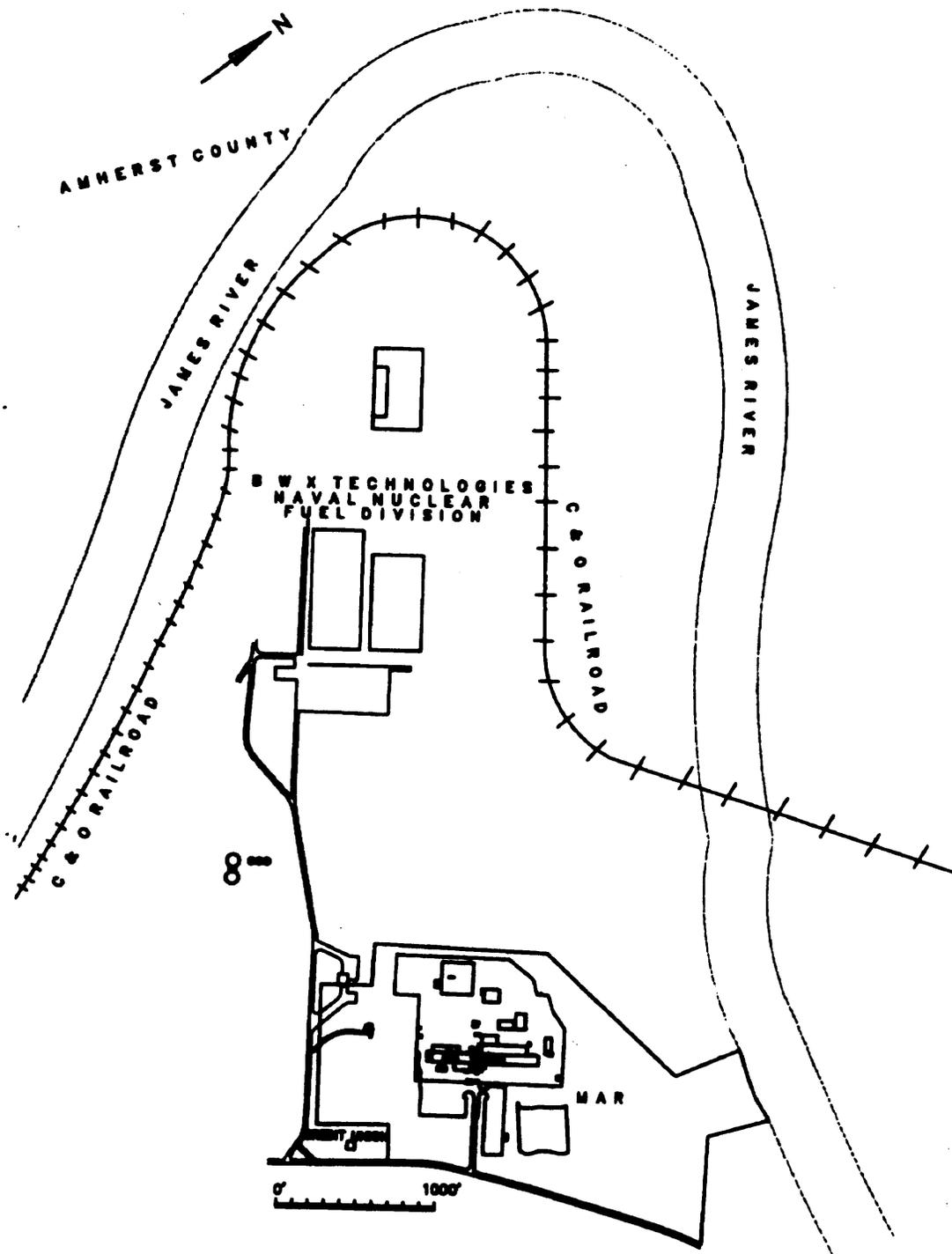


Figure 2 - Facility Location Relative to BWX Technologies



**Framatome ANP**

The NOAA publication "Climatic Wind Data for the United States" of November 1998 provided the mean speed and peak speed for wind for the period of 1930 to 1996 (Ref. 2). For Lynchburg, the maximum mean wind speed is recorded as 9 mph and the maximum peak speed is recorded as 74 mph. The building specifications for the building where operations with SNM are conducted call for withstanding a wind load of approximately 90 mph, so it is unlikely that the building would suffer damage from wind.

General air quality in the region is good. Air quality data was obtained from the "Virginia Ambient Air Monitoring Report" published by the Virginia Department of Environmental Quality (Ref. 4). There is only one monitoring station that monitors one pollutant in the South Central Monitoring Network, which encompasses the facility. The pollutant is particulate matter with an aerodynamic diameter less than or equal to 2.5 microns (PM<sub>2.5</sub>). For 2001, the monitoring station had 115 observations for PM<sub>2.5</sub>. Of these 115 observations, none exceeded the 24 hour concentration National Ambient Air Quality Standards (NAAQS) limit of 65 micrograms/cubic meter.

### Hydrology

The site sits in a bend of the James River, which forms the only surface water in the immediate area. The water quality of the James River is monitored by the state of Virginia. The facility has no direct discharges to the James River. The only liquid effluent stream is the storm water discharge system, which is controlled under the storm water discharge permit issued by the State of Virginia.

The James River has flooded in the past, the most recent in 1985 with a flood stage of 151 m (493 ft) MSL at the site (Ref. 5, 6). Upstream flood control facilities reduce the possibility that the maximum historical flood stages will be exceeded. Also, the elevation of the plant floors at the site are above the maximum historical flood stage, therefore, it is unlikely that flooding of the James River would affect licensed activities.

The FANP site is located near an area of small wetlands (Ref. 5). Since the facility does not have any direct discharges to either groundwater or surface water, and since the storm water discharges are controlled through State of Virginia permitting, it is unlikely that plant operations will disturb the nearby wetlands.

The site groundwater supply is stored in three 150,000 gallon tanks located on a hilltop on the property immediately north of the one million gallon service water tank (Ref. 3). The facility utilizes groundwater from these tanks at an average rate of 2,500 gallons per day. The site obtains groundwater data from wells on the adjacent site under an agreement with their neighbor, BWX Technologies, which monitors the quality of this water. Based on the BWX Technologies data, there is no indication of degradation of the groundwater during the years of operation.

### Geology

The James River Basin of Virginia includes portions of four physiographic provinces characterized by distinct land forms and physical features. These provinces, located west to east, are Valley and Ridge, Blue Ridge, Piedmont, and Coastal Plain. Western, or inner, Piedmont, where the FANP property lies, is an upland characterized by scattered hills, some of mountainous dimensions, lying eastward from the foot of the Blue Ridge (Ref. 3,5).

Borings and excavations at the site have revealed that the site is blanketed by a layer of dark-brown sandy-clay topsoil which contains extensive root structures. The topsoil is approximately 0.15 to 0.45 m (6 to 18 in) thick and is underlain by strata 3 to 12 m (10 to 40 ft) thick of firm, primarily cohesive soils such as clay and silt loam. These cohesive soils lie above a stratum approximately 1.5 m (5 ft) thick of coarse sand, gravel, cobbles, and boulders, which in turn is underlain by highly weathered bedrock. The upper surfaces of the bedrock are irregular and may slope downward generally in a northerly direction. The unweathered bedrock was encountered at an elevation of approximately 158 m (520 ft) MSL around the site. Along the meandering bank of the river, much of the bedrock is heavily bracketed by alluvium (Ref. 6).

There have been no important mineral resources identified at the FANP site, and there is no indication on the U.S. Geological Survey (USGS) topographic maps of significant surface or underground mining activities within 8 km (5 miles) of the site (Ref. 3).

### Seismology

The central Appalachian region of Virginia is characterized by a moderate amount of low-level earthquake activity which appears as somewhat isolated "clusters" of seismic energy release; there is a central Virginia cluster, a western Virginia-West Virginia cluster and a northern Virginia-Maryland-West Virginia cluster. The facility is located in the western part of the central Virginia cluster region which is classified as Zone 2 in the Seismic Risk Map of the United States (Ref. 3, 5).

During the period 1758 through 1968, 121 earthquake epicenters in Virginia were reported. The largest earthquake was in 1897, with a probable epicenter in Giles County, approximately 100 miles west of the plant site (Ref. 3, 5). A maximum intensity of VIII was estimated in the epicentral region, but an intensity of only V-VI was estimated for the facility site. For this earthquake, the Lynchburg area reported it was perceptible with bricks falling from chimneys and furniture and housewares being jostled (Ref. 5, 6).

Earthquakes with intensities of VI are not expected to cause serious damage to the FANP facilities nor result in release of hazardous materials.

### Biota

The natural vegetation in the region is classified as oak-hickory-pine. There is a wide diversity of plants consisting of over 400 species (Ref. 5, 6). Most of the site has been cleared, but the undeveloped portions are maintained either as grassland or forest.

The aquatic biota of the James River in the vicinity of the site is generally characteristic of that of a moderately polluted flowing river (Ref. 5, 6). Examination of phytoplankton communities downstream of the site at Cartersville shows reasonably diverse communities consisting of green, yellow-green (diatoms), and blue-green algae during the late summer. Phytoplankton communities during the fall, winter, and early summer consisted almost entirely of a few species and individuals of yellow-green algae.

The benthic community in the middle reaches of the James River near the site is characteristic of areas with both flowing and backwater areas. Many of the dipteran (true fly) species are indicative of moderately polluted waters with occasional periods of low dissolved oxygen (Ref. 5, 6). The species of mayflies, stoneflies and caddisflies present in this area are found in the flowing water areas that supply a constant source of available dissolved oxygen.

The aquatic life of the James River primarily consists of minnows, sucker, sunfish, perch and catfish families (Ref. 5, 6). Species in these families range from common to uncommon. There is no commercial fishery in the vicinity of the FANP site (Ref. 3).

The following species are either listed or proposed for Campbell County; bald eagle, smooth coneflower, sweet pine sap, Torrey's mountain mint, orangefin madtom, and the bigeye jumprock (Ref. 7).

### Historic Significance

The only historic site on the National Register of Historic Places near the facility (within 5 miles) is the 19<sup>th</sup> century Mt. Athos Plantation, which is across the road to the east. There are numerous historic places between 8 and 40 km (5 and 25 miles) from the Framatome site, particularly in Bedford County and Lynchburg to the west. The best known historic site is Appomattox Court House National Historic Park, about 24 km (15 miles) to the east (Ref. 8).

### Demographics

Census data from the U.S. Census Bureau for the 2000 census indicated that the population for Campbell County was 51,078. Population for the city of Lynchburg was 65,269 (Ref. 9).

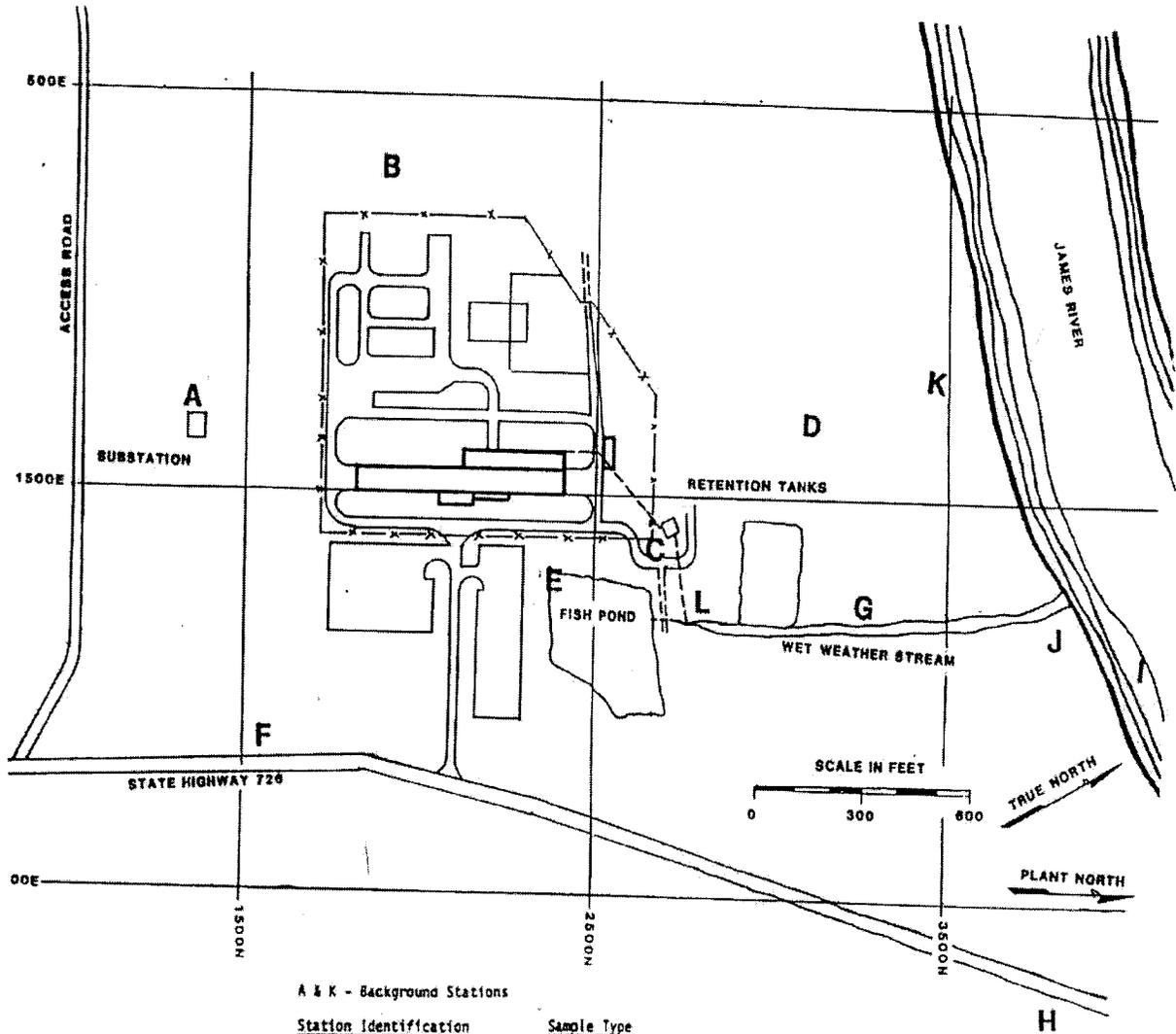
Because of the terrain, most of the population within a 5 mile radius of the facility resides over 3 miles from the site. Approximately two-thirds of the population within 5 miles of the plant reside between the 3 and 5 mile radii in the WSW to WNW directions. This includes the eastern portions of the City of Lynchburg and the community of Madison Heights. There are no significant clusters of population within a 2 mile radius of the facility. The closest inhabitants occupy residences, which are located about one-half mile to the ENE (Ref. 5, 9, 10).

Within a 3 mile radius of the plant, there are only a few public facilities or business activities that attract large numbers. The neighboring Archer Creek Plant of the Lynchburg Foundry and BWX Technologies are the only other major industries in the immediate vicinity (Figure 2). Approximately 3000 workers are employed at these facilities (Ref. 10). The Central Virginia Credit Union is located immediately next to the facility, at the intersection of Route 726 and the entrance to BWX Technologies.

## ENVIRONMENTAL MONITORING

To monitor the environmental performance of the facility, Framatome ANP has established a variety of environmental monitoring stations. Soil, water, sediment, and vegetation samples along with radiation monitors (TLD's) are taken to monitor for the environmental impact of the facility. The location of environmental monitoring stations is shown in Figure 3.

Figure 3 Environmental Monitoring Stations



A & K - Background Stations

Station Identification	Sample Type
A	Soil, Air, Vegetation, TLD
B	Soil, Vegetation, TLD
C	Air, TLD
D	Soil
E	Water, Sediment
F	Soil, Air, Vegetation, TLD
G	Soil
H	Soil, Vegetation
I	Water, Sediment
J	Water, Sediment
K	Water, Sediment
L	Water, Sediment

## Air Effluents

Potentially contaminated air is exhausted through a pre-filter and high efficiency (HEPA) filter media that are rated for at least 99.95% efficiency for removal of 0.3 micron particles. Exhausts from the pellet loading room and vault pass through two HEPA filters and then are mixed with general plant air prior to being released to the atmosphere via a stack whose height is 21 meters. Exhausts from the areas where work on by-product material is conducted pass through a single HEPA filter prior to release.

## Liquid Effluents

There are a number of liquid effluent streams from the facility. Those effluent streams are as follows:

### Storm Water and Non-Contact Cooling Water Discharges

Precipitation run-off is collected and discharged directly to the environment via a number of storm water outfalls. Additionally, some storm water discharge paths, as well as non-contact cooling water, are directed to the fire pond where they eventually discharge via another storm water outfall. These discharges are regulated under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Commonwealth of Virginia. This permit was updated and renewed in 2001 (Ref. 9).

### Sewage

Sanitary wastes for the facility are piped to BWX Technologies under a service agreement.

### Radioactive Waste Water

Small quantities of potentially contaminated water are generated in the pellet loading room. This is generally mop water, although occasionally water from other activities is generated. This water is eliminated via an evaporation system into the existing airborne effluent control system where it is HEPA filtered prior to release. Any dried sludge or other solids collected from the evaporation vessels are disposed of as low specific activity (LSA) waste.

Small quantities of potentially contaminated water are generated in the service equipment refurbishment facilities (SERF's). This is generally mop water, although occasionally water from other activities is generated. This water is eliminated via evaporation systems into the existing airborne effluent control systems where it is HEPA filtered prior to release. Any dried sludge or other solids collected from the evaporation vessels are disposed of as LSA waste.

Additionally, the facility minimizes the generation of contaminated water by sending potentially contaminated laundry to a licensed facility for laundering. This laundry is washed and verified to meet release limits prior to being returned to site.

### Process Waste Water

There is no process waste water associated with uranium production at this facility. Process waste water from general manufacturing operations is collected and accumulated in retention tanks. When sufficient water is collected it is then transported via tanker truck to the City of Lynchburg waste water treatment facility for processing.

## Solid Wastes

The facility generates contaminated solid wastes, hazardous wastes and non-hazardous uncontaminated solid wastes. These wastes are generated and disposed of as follows:

### Contaminated Wastes

Contaminated wastes from fuel handling areas consist principally of package material, floor sweepings, decontamination materials and contaminated equipment. This material is stored until there is a sufficient quantity available for shipment to a NRC licensed offsite burial facility or contaminated waste processor.

Contaminated wastes from the SERF's consist principally of contaminated equipment, decontamination materials, used personal protective equipment (i.e. gloves, booties, etc.), and floor sweepings. This material is stored until there is a sufficient quantity available for shipment to a NRC licensed offsite burial facility or contaminated waste processor.

Additionally, contaminated wastes are generated during environmental cleanup activities. This material is stored until there is a sufficient quantity available for shipment to a NRC licensed offsite burial facility or contaminated waste processor. Approximately 28,000 kg (62,000 lbs) of contaminated waste are generated and disposed of per year.

### Hazardous Waste

As a result of the manufacturing processes at the facility, some hazardous waste is generated. The types and quantities are reported in accordance with the Resource Conservation and Recovery Act (RCRA) requirements. Approximately 23,000 kg (51,000 lbs) of hazardous waste are produced and disposed of per year.

### Non-Hazardous And Uncontaminated Solid Wastes

Uncontaminated and non-hazardous solid wastes are disposed of by a private waste hauler at the Lynchburg Sanitary Landfill. Approximately 175 tons (170 metric tons) of this type of waste is sent to the landfill per year.

## ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

### Radiological Impacts

#### Occupational Dose

A review of the licensee records for 2000 and 2001 indicated that the average exposure for workers receiving doses was less than 55 mrem and only two workers received more than 2000 mrem for both years combined. For comparison, the NRC external deep dose limit is 5000 mrem per year.

In 2000 and 2001 the highest committed effective dose equivalents (CEDE) were 989 and 617 mrem per year, respectively. These doses were well below the NRC limit of 5000 mrem per year CEDE.

## Public Dose

Radiological exposure to the nearest resident, 800 meters away, due to airborne effluents was calculated as an effective dose equivalent of  $9.1 \text{ E-3 mrem/yr}$  (Ref. 3). This is well below the 10 CFR 20.1101(d) dose constraint on air emissions of radioactive material to the environment of  $10 \text{ mrem/yr}$  for individual member of the public likely to receive the highest dose.

The total effective dose equivalent to individual members of the public was used with the environmental TLD data. The average environmental TLD reading was  $62.2 \text{ mrem/yr}$  with a maximum reading of  $74.9 \text{ mrem/yr}$  (Ref. 3). This maximum dose is less than the  $0.1 \text{ rem/yr}$  limit in 10 CFR 20.1301(a)(1).

## Environment

The effluent of a common stack from the pellet loading room and pellet vault is monitored, evaluated and reported biannually. The samples are analyzed for uranium 234, 235, 236 and 238 giving the gross alpha release data for this airborne effluent. The average biannual gross alpha value from 1997 to 2001 was  $1.87 \mu\text{Ci}$  (Ref. 3). The highest value for this time period was  $2.45 \mu\text{Ci}$ . These values do not exceed the established license limit for this stream of  $10 \mu\text{Ci}$  per quarter.

Airborne effluent from each of the four SERFs and the Chemical Laboratory are also monitored, evaluated and reported biannually. These samples are analyzed for cobalt 60. The levels of cobalt 60 are consistently below the regulatory limits in 10 CFR Part 20 Appendix B ( $5\text{E-}11 \mu\text{Ci/ml}$ ). It should be noted that SERF-1 was removed from service in December 2000 and the Chemical Laboratory was placed into service in January 2001.

Environmental monitoring is conducted for water, air, soil, radiation, sediment, and vegetation. Analyses of these samples is for alpha and beta concentrations. The water monitoring data for 1997 to 2001 indicated no levels above those identified in 10 CFR 20 Appendix B (Ref. 3). The CAP-88 computer software program was used to calculate exposures to the nearest resident due to airborne effluents. The calculated whole body value was  $8.22 \text{ E-}4 \text{ mrem/year}$  compared to 40 CFR 190.10 limit of  $25 \text{ mrem/year}$  (Ref. 3). The calculated dose to the thyroid was  $6.85 \text{ E-}4 \text{ mrem/year}$  compared to the limit of  $75 \text{ mrem/year}$  and a dose to any organ was calculated at  $6.09 \text{ E-}4 \text{ mrem/year}$  compared to the  $25 \text{ mrem/year}$  limit (Ref. 3).

## Transportation Impacts

The licensee is required to comply with Department of Transportation regulations (49 CFR Parts 170-179) and the NRC regulations (10 CFR Part 71) for transporting radioactive materials. The environmental impacts from transporting radioactive materials to and from this site have been evaluated in the Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes (Ref. 12). The principal radiological environmental impact during normal transportation is direct radiation exposure to nearby persons from radioactive material in the package. The average annual individual dose from all radioactive material transportation in the U.S. was calculated to be approximately  $0.5 \text{ mrem}$ , well below the 10 CFR 20.1301 requirement of  $0.1 \text{ rem}$  for a member of the public. Neither continued operation nor discontinuance would significantly affect transportation impacts.

## Non-radiological impacts

### Health and Safety

Framatome conducted a review of the role of chemicals in the fuel fabrication process. That review showed that in the mechanical processes found at the facility, there are no hazardous chemicals produced from SNM and no significant amount of chemicals used in the vicinity of SNM (Ref. 10) which could affect fuel fabrication activities. Chemical safety will be controlled in accordance with OSHA guidelines.

A Fire Hazard Analysis (FHA) was conducted for the facility by Framatome with a specific emphasis on the areas where SNM is located or which could effect SNM. The FHA identified two scenarios which had a postulated impact of significant damage to the facility and a probability rating of "low" or higher (Ref. 10). One scenario involved a break in a natural gas line and the other involved a fire in a non-SNM area, the grid cage fabrication shop. Additional equipment was recently installed to minimize the effects of a fire under these scenarios.

### Environment

Storm water and non-contact cooling water discharges are regulated under a National Pollutant Discharge Elimination System (NPDES) permit issued by the Commonwealth of Virginia. Annual monitoring of the concentration of total recoverable zinc, iron, and aluminum, and total dissolved solids is required for these water discharges as well as flowrate, pH, temperature, and hardness. These discharges are consistently below the NPDES permit levels.

### Biota

In a letter dated October 2, 2002, the U.S. Fish and Wildlife Service concluded that renewal of SNM-1168 is not likely to adversely affect any federally listed or proposed species or their designated critical habitat (Ref. 11).

### Transportation impacts

Due to limited traffic flow at the facility compared to normal traffic flow in the area, neither continued operation nor discontinuance would significantly affect non-radiological transportation impacts such as truck accidents and air emissions.

### Cultural and Historic Resources

Neither continued operations nor discontinuance would adversely affect historic properties. The staff consulted the State of Virginia Liason Officer for Historic Preservation and they provided no comments.

## Impacts Due to Accidents

There are no significant chemical processes at this facility. The worst case chemical accident scenario would be a localized spill of a chemical from a container. The potential types and amounts are as reported in the Tier II report submitted as part of the Supplement to the Environmental Report (Ref. 9). Exposure pathways for people would be direct contact and/or

inhalation of the fumes associated with the spilled chemical by persons in the immediate vicinity of the spill. Exposure pathway for the environment would be contamination of either ground water or storm water. Preventative and mitigative measures in place include, but are not limited to, a hazards communications program, a hazardous materials emergency response team, and emergency response planning.

The worst case radiological scenario results from an inadvertent nuclear criticality. The potential impact of such an inadvertent nuclear criticality was previously provided in documents submitted in support of a request for an exemption from the requirement to maintain an emergency plan (Ref. 13).

#### Impacts of the Alternative to the Proposed Action

The NRC staff considered one alternative to the proposed action which is renewal of the license to authorize decommissioning only. There would be a transition to site-wide decommissioning activities which have not been identified at this time, but would be assessed when FANP submits a site-wide decommissioning plan. A deadline for submitting the plan would be assigned.

If the license was to be renewed for decommissioning only, the main impact would be that activities at another existing fuel facility would need to be expanded to meet the needs of the nuclear industry.

#### SOCIOECONOMIC IMPACTS

Employment at the site is not a major factor in the economy of the Lynchburg region. Neither continued operation nor discontinuance would have a significant impact on socioeconomic conditions.

#### CUMULATIVE IMPACTS OF THE PROPOSED ACTION

The cumulative impacts due to the proximity of the BWX Technologies plant were evaluated and found to be insignificant. Given the low doses to the public and the environment from operations at the FANP site (see Section entitled ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION), when added to doses from operation of the BWX Technologies site, the result is still within regulatory limits. The pathways considered were air effluents and direct radiation.

#### DECOMMISSIONING

Environmental remediation has been accomplished on the wet weather stream, a previously contaminated portion of the site. This remediation was evaluated in a Safety Evaluation Report by the NRC, dated April 3, 2000, which concluded that this area could be released for unrestricted use with no remedial action and further characterization (Ref. 14).

At the end of operating life, the plant will be decontaminated and decommissioned before the site and any plant buildings remaining on site can be released for unrestricted use. Future decommissioning will meet applicable NRC requirements.

The staff has evaluated the current version of the Decommissioning Funding Plan and found it to be acceptable.

## AGENCIES AND PERSONS CONSULTED

Leslie Foldesi, VA Dept of Health, Division of Radiation Safety (no objection to proposed action)

Karen Mayne, VA Field Office, U.S. Fish and Wildlife Service (no objection to proposed action)

Ethel Eaton , VA Department of Historic Resources (did not provide comments)

## CONCLUSIONS

Based on an evaluation of the environmental impacts of the amendment request, the NRC has determined that the proper action is to issue a FONSI in the Federal Register. The NRC staff has determined that the proposed license renewal for continued operation of FANP Lynchburg will have no significant effect on public health and safety or the environment.

## LIST OF REFERENCES

- 1 National Oceanographic and Atmospheric Administration, Climatology of the United States No. 81 - Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1971-2000.
- 2 National Oceanographic and Atmospheric Administration, Climatic Wind Data for the United States, November 1998.
- 3 Framatome ANP, Inc., Response to the Request for Additional Information for License Renewal, SNM-1168, Docket No. 70-1201, November 8, 2002.
- 4 Virginia Department of Environmental Quality, Virginia Ambient Air Monitoring 2001 Data Monitoring Report, Annual Summary Data, 2001.
- 5 U.S. Nuclear Regulatory Commission, Environmental Assessment for Renewal of Special Nuclear Material License No. SNM-42, Docket No. 70-27, August, 1991.
- 6 U.S. Nuclear Regulatory Commission, Environmental Impact Appraisal, Babcock & Wilcox Commercial Nuclear Fuel Plant, Related to Renewal of Special Nuclear Materials License No. SNM-1168, Docket No. 70-1201, May 1983.
- 7 U.S. Fish and Wildlife Service, Virginia Field Office, Federally Listed, Proposed and Candidate Species Campbell County Virginia, June 16, 2002.
- 8 National Register of Historic Places, Campbell County Virginia, phone correspondence with Ethel Eaton.
- 9 Framatome ANP, Inc., Supplement to the Environmental Report, SNM-1168, Docket No. 70-1201, March 28, 2002.
- 10 Framatome ANP, Inc., Application for License Renewal of SNM-1168, Docket No. 70-1201, March 28, 2002.

- 11 Karen L. Mayne, U.S. Fish and Wildlife Service, Virginia Field Office, Letter to Peter Lee re: Special Nuclear Material License Renewal of Framatome ANP, Mt. Athos Road Facility, #2708, Campbell County, Virginia, October 2, 2002.
- 12 U.S. Nuclear Regulatory Commission, Final Environmental Impact Statement on the Transportation of Radioactive Material by Air and Other Modes, 1977.
- 13 B & W Fuel Company, letter to Robert Pierson re: Exemption from Emergency Plan, March 21, 1994.
- 14 U.S. Nuclear Regulatory Commission, Amendment 39 to SNM-1168, Unrestricted Release of the Wet Weather Stream, April 3, 2000.

#### LIST OF PREPARERS

Julie Olivier  
Patricia Silva  
Caroline Acosta-Acevedo