UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

January 11, 2000

Otto L. Maynard, President and
Chief Executive Officer
Wolf Creek Nuclear Operating Corporation
P.O. Box 411
Burlington, Kansas 66839

SUBJECT: NRC INSPECTION REPORT NO. 50-482/99-21

Dear Mr. Maynard:

This refers to the inspection conducted on December 13-17,1999, at the Wolf Creek Generating Station facility. The purpose of this inspection was to review your radioactive waste effluent program and engineered-safety-feature air filtration testing program. The enclosed report presents the results of this inspection.

We determined that radioactive waste effluent releases were properly controlled, monitored, and quantified. Engineered-safety-feature air filtration and adsorption units were properly tested and maintained.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room (PDR).

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Gail M. Good, Chief
Plant Support Branch
Division of Reactor Safety

Docket No.: 50-482
License No.: NPF-42

Enclosure:
NRC Inspection Report No.
50-482/99-21

cc w/enclosure:
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E-Mail report to D. Lange (DJL)
E-Mail report to NRR Event Tracking System (IPAS)
E-Mail report to Document Control Desk (DOCDESK)

E-Mail notification of report issuance to the WC SRI and Site Secretary (FLB2, SLA2).

E-Mail notification of issuance of all documents to Nancy Holbrook (NBH).

bcc to DCD (IE06)

bcc distrib. by RIV:

Regional Administrator	Wolf Creek Resident Inspector
DRP Director	SRI (Callaway, RIV)
DRS Director	RIV File
Branch Chief (DRP/B)	RITS Coordinator
Project Engineer (DRP/B)	Branch Chief (DRP/TSS)

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*MPShannon /s/		*JBNicholas /s/		*DRCarter /s/		*GMGood /s/		WDJohnson RAK for	
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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.:	50-482
License No.:	NPF-42
Report No.:	50-482/99-21
Licensee:	Wolf Creek Nuclear Operating Corporation
Facility:	Wolf Creek Generating Station
Location:	1550 Oxen Lane, NE Burlington, Kansas
Dates:	December 13-17,1999
Inspectors:	J. Blair Nicholas, Ph.D., Senior Radiation Specialist Plant Support Branch
	Daniel R. Carter, Radiation Specialist Plant Support Branch
Approved By:	Gail M. Good, Chief, Plant Support Branch Division of Reactor Safety
Attachment:	Supplemental Information

EXECUTIVE SUMMARY

Wolf Creek Generating Station
NRC Inspection Report No. 50-482/99-21

This announced, routine inspection reviewed the implementation of the liquid and gaseous radioactive waste effluent management program, status of the effluent radiation monitors and chemistry counting room instruments, and implementation of the engineered-safety-feature filtered ventilation systems maintenance and in-place filter testing program. Training and qualifications of personnel, quality assurance oversight, and annual radiological effluent release reports were also reviewed.

Engineering

- The engineered-safety-feature air filtration and adsorption units were properly maintained. Effective in-place filter and laboratory testing programs were implemented. The system engineer responsible for the engineered-safety-feature filter ventilation systems was knowledgeable of the systems and appropriately involved in implementing the filter testing program. The areas surrounding the ventilation filtration units were clean and free of debris (Sections E2.1 and E3.1).

Plant Support

- Overall, an effective radioactive effluent monitoring program was implemented. The processing, sampling, and analyses of radioactive liquid and gaseous waste effluents and the performance of effluent discharges were conducted in accordance with Offsite Dose Calculation Manual requirements. Improved performance was noted in the reduction of liquid and gaseous effluent radionuclide curies released and offsite doses. Since 1996, the curie amount of radioactive liquid and gaseous effluents released and resulting doses to the environment were reduced approximately 90 percent (Section R1.1).

- A comprehensive effluent monitor calibration and channel check program was in place. Effluent radiation monitors were properly calibrated, and channel checks were performed in accordance with Offsite Dose Calculation Manual requirements. The chemistry counting room's analytical instrumentation used to analyze radioactive effluent samples was properly maintained, tested, and calibrated in accordance with station procedures. Effluent radiation monitors, storage tanks, and effluent processing equipment were in good material condition. The areas where effluent radiation monitors and radioactive waste effluent storage tanks and processing equipment were located were clean and well maintained (Sections R2.1 and R2.2).

- Implementing procedures for the radioactive waste effluent program provided proper guidance. Revisions to the Offsite Dose Calculation Manual were appropriately implemented and did not reduce the effectiveness of the radioactive waste effluent program. The 1997 and 1998 Annual Radioactive Effluent Release Reports were submitted in a timely manner, contained the required information, and included a

comprehensive executive summary that provided liquid and gaseous effluent performance trends relative to previous years (Section R3).

- An effective radioactive waste effluent training program for chemistry technicians, radwaste operators, and nuclear station operators was implemented. The chemistry technician training program course materials were well organized and included the subject areas needed to qualify chemistry technicians to independently sample and analyze liquid and gaseous effluents and prepare effluent batch release permits. The experience, training, and working knowledge of the chemistry and radwaste operations personnel met the training and qualification requirements (Section R5).

- Quality assurance oversight was effective. The lead auditor and technical specialists assigned to perform the audits of the radioactive waste effluent management program were experienced and well qualified to perform the program evaluations. The audits were intrusive and thorough and provided management with a comprehensive assessment of the Offsite Dose Calculation Manual and the radioactive waste effluent management program. Audit findings were properly documented, tracked in the station's Performance Improvement Request reporting system, and satisfactorily addressed in a timely manner. Performance Improvement Requests identified issues at the proper threshold to provide management with the information needed to assess the radioactive waste effluent management program (Section R7).

Report Details

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 Engineered-Safety-Feature Filter Ventilation Systems

a. Inspection Scope (84750)

The inspectors performed visual inspections of the control room emergency ventilation and the emergency exhaust air cleaning systems and interviewed the system engineer assigned to the ventilation systems.

b. Observations and Findings

During walk downs of the control room emergency ventilation and emergency exhaust filtration systems, the inspectors noted that the equipment was well maintained. Additionally, the inspectors determined that there was no obvious physical damage to the air cleaning systems which would have prevented them from performing their required safety functions. All filter housing doors were tightly closed, and the door gaskets were not leaking. Test ports for in-place filter testing were installed and easy to access. Redundant systems were available, as required. From interviews with the system engineer responsible for the maintenance and performance of the air cleaning systems, the inspectors concluded that the system engineer was knowledgeable of the air cleaning systems and appropriately involved in the implementation of the filter testing program. Housekeeping in the areas surrounding the ventilation filtration units was good and the areas were free of debris.

c. Conclusions

The engineered-safety-feature air filtration and adsorption units were properly maintained. The system engineer responsible for the engineered-safety-feature filter ventilation systems was knowledgeable of the systems and appropriately involved in implementing the filter testing program. The areas surrounding the ventilation filtration units were clean and free of debris.

E3 Engineering Procedures and Documentation

E3.1 Engineered-Safety-Feature Filter Ventilation System Equipment Testing Results

a. Inspection Scope (84750)

The inspectors reviewed the following records to determine compliance with Technical Specification requirements:

- Records of the in-place filter testing of high efficiency particulate air filters and charcoal adsorbers

- Records of laboratory test results of charcoal adsorbers

b. Observations and Findings

The filter testing was properly tracked by the control room and system engineer. Through a review of the in-place filter test results, the inspectors confirmed that the licensee complied with the Technical Specification requirements of Sections 4.7.6 (c)(1) and 4.9.13 (b)(1). The inspectors also confirmed that laboratory testing of charcoal adsorber samples was performed by an offsite vendor laboratory in accordance with Sections 4.7.6 (c)(2) and 4.9.13 (b)(2) of the Technical Specifications.

c. Conclusions

Effective in-place filter and laboratory testing programs were implemented.

E7 Quality Assurance in Engineering Activities

The inspectors confirmed that a Nuclear Procurement Issues Committee audit was performed of the vendor performing laboratory testing of the charcoal adsorber material samples. The inspectors concluded from a review of the audit summary that there were no adverse findings which would render the vendor laboratory test results invalid.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Implementation of the Liquid and Gaseous Radioactive Waste Program

a. Inspection Scope (84750)

Implementation of the liquid and gaseous radioactive waste effluent management program, as described in the Offsite Dose Calculation Manual, was reviewed. Selected personnel involved in the radioactive waste effluent management program were interviewed. The following items were reviewed:

- Twelve batch radioactive liquid effluent release permits during the period January 1998 through November 1999 from the waste monitor tanks and secondary liquid waste monitor tanks

- Ten batch radioactive gaseous waste effluent release permits during the period January 1998 through November 1999 from the waste gas decay tanks and containment

- Selected liquid waste effluent sample analyses of continuous release samples from the steam generator blowdown, turbine building sump, waste water

treatment pond, and lime sludge pond during the period January 1998 through November 1999

- Selected gaseous waste effluent sample analyses of continuous release samples from the unit vent and radwaste building vent during the period January 1998 through November 1999

- Dose results calculated from liquid and gaseous waste effluent releases during 1998 and the first three quarters of 1999

- Offsite Dose Calculation Manual requirements

- Quarterly and monthly liquid and gaseous effluent sample results

The inspectors observed the following activities:

- The collection of gaseous effluent weekly grab samples from the unit and radwaste building vents and the performance of radiochemistry analyses for airborne particulates, iodine, noble gases, and tritium, and the update of the weekly continuous release data

- The collection of gaseous samples from containment for a containment purge batch release, performance of the radiochemistry analyses for noble gases and tritium, preparation of the containment purge release permit, and the performance of the containment purge by the control room operators

b. Observations and Findings

On December 14, 1999, and December 16, 1999, the inspectors observed chemistry technicians perform the weekly grab sample collections and radiochemistry analyses for the samples collected from the unit vent and radwaste building vent, respectively. On December 15, 1999, the inspectors observed a chemistry technician perform the containment purge sample collections and analyses. The inspectors also observed the preparation of the containment purge release permit including the required approval authorizations, the verification of the effluent radiation monitor set points prior to initiating the containment purge, performance of the containment purge by the control room operators, and the post-release dose calculations performed by a chemistry technician. The inspectors noted that the chemistry technicians referred to and followed the appropriate chemistry procedures.

The radioactive liquid and gaseous waste effluent sampling and analyses were performed in accordance with approved procedures and the requirements of Tables 2-1 and 3-1 of the Offsite Dose Calculation Manual. Quantities of radionuclides released in the liquid and gaseous radioactive waste effluents were within the limits specified in the Offsite Dose Calculation Manual. Cumulative dose contributions and projected doses from liquid and gaseous effluents were determined at least once per 31 days in accordance with the methodologies and parameters described in the Offsite Dose Calculation Manual, and the calculated dose results were well within the regulatory limits.

From a review of data supplied by the licensee, the inspectors noted that the volume of liquid radioactive waste discharged since 1996 has been reduced significantly from 46.2 million gallons to an estimated 0.8 million gallons, a 98 percent reduction. The inspectors determined that the curie amount of mixed radioactive liquid effluent mixed fission and activation products released between 1996 and 1999 showed a declining trend from 1.21 curies to an estimated 0.06 curies, a 95 percent reduction. This reduction in liquid effluent curies released was the result of a new processing method which incorporated the use of a spiral reverse osmosis unit and a tubular ultra filtration unit along with demineralizer beds. As a result of the above reductions in liquid effluent discharges, the licensee's liquid effluent discharge performance was projected to be in the top (best) quartile for pressurized water reactors.

The whole-body and organ doses resulting from liquid effluents showed a declining trend since 1996. The whole body dose reduction between 1996 and 1998 was approximately 71 percent, and the organ dose reduction was approximately 87 percent. The 1998 whole body dose represented approximately 3.74 percent of the annual regulatory limit, and the maximum organ dose resulting from the liquid effluent releases represented approximately 1.17 percent of the annual regulatory limit.

From 1996 through 1999, the gaseous effluent data showed a 90 percent reduction in the curie amount of airborne fission and activation radioactivity gases released from the station. This resulted in a gamma air dose reduction of 76 percent and a beta air dose reduction of 94 percent. The gamma and beta air doses calculated from the gaseous effluent releases represented less than 0.02 percent of the annual regulatory limit. As a result of the above reductions in gaseous effluent discharges, the licensee's gaseous effluent release performance was projected to be near the median for pressurized water reactors.

c. Conclusions

Overall, an effective radioactive effluent monitoring program was implemented. The processing, sampling, and analyses of radioactive liquid and gaseous waste effluents and the performance of effluent discharges were conducted in accordance with Offsite Dose Calculation Manual requirements. Improved performance was noted in the reduction of liquid and gaseous effluent radionuclide curies released and offsite doses. Since 1996, the curie amount of radioactive liquid and gaseous effluents released and resulting doses to the environment were reduced approximately 90 percent.

R2 Status of Radiation Protection and Chemistry Facilities and Equipment

R2.1 Chemistry Counting Room

a. Inspection Scope (84750)

The chemistry counting room's analytical instrumentation was inspected to verify that appropriate calibration and quality control programs were being implemented.

b. Observations and Findings

The inspectors determined from observations and interviews with chemistry technical staff that the chemistry counting room maintained appropriate analytical instrumentation to perform the required radiochemistry analytical measurements of the radioactive waste effluent samples. Quality control indicators were tracked and trended for the gamma spectroscopy, liquid scintillation, and gross alpha counting systems. Calibration and quality control data, in addition to direct observation, showed that the counting room instruments were operable, well maintained, and calibrated. Chemistry technicians were properly trained and experienced on the use of the counting room instrumentation.

c. Conclusions

The chemistry counting room's analytical instrumentation used to analyze radioactive effluent samples was properly maintained, tested, and calibrated in accordance with station procedures.

R2.2 Liquid and Gaseous Effluent Radiation Monitors and Storage and Processing Equipment

a. Inspection Scope (84750)

The inspectors interviewed licensee personnel and reviewed the following items:

- Radioactive waste effluent storage and processing equipment
- Effluent radiation monitor physical condition and operability
- Effluent radiation monitor checks and calibrations

b. Observations and Findings

During the inspection of the liquid and gaseous effluent radiation monitors and flow measurement equipment, radioactive waste effluent storage tanks, and effluent processing equipment, the inspectors found all radiation effluent monitors and effluent processing equipment operable, and all were in good material condition. Additionally, the above areas in the radwaste building were clean and well maintained. The inspectors determined that gaseous and liquid radioactive waste effluents were properly stored and processed, and effluent inventories were properly maintained. The inspectors verified that source checks, channel checks, channel functional checks, and calibrations were properly performed on the liquid and gaseous effluent radiation monitors and flow measurement equipment in accordance with procedures and the requirements specified in Tables 2-3 and 3-3 of the Offsite Dose Calculation Manual.

c. Conclusions

A comprehensive effluent monitor calibration and channel check program was in place. Effluent radiation monitors were properly calibrated, and channel checks were performed in accordance with Offsite Dose Calculation Manual requirements. Effluent radiation monitors, storage tanks, and effluent processing equipment were in good material condition. The areas where effluent radiation monitors and radioactive waste

effluent storage tanks and processing equipment were located were clean and well maintained.

R3 Radiological Protection and Chemistry Procedures and Documentation

a. Inspection Scope (84750)

The following items were reviewed:

- Procedures for the sampling, analysis, and release of radioactive liquid and gaseous waste effluents
- Revisions to the Offsite Dose Calculation Manual involving changes to the radioactive waste effluent management program
- 1997 and 1998 Annual Radioactive Effluent Release Reports

b. Observations and Findings

Chemistry procedures assigned the responsibilities for implementation of the radioactive waste effluent management program and provided proper instruction to effectively perform the required radioactive waste effluent program activities. Chemistry procedures also provided proper guidance in the use of quality controlled computer software to perform pre- and post-release dose calculations in accordance with the dose calculation methodologies described in the Offsite Dose Calculation Manual.

The Offsite Dose Calculation Manual was revised and divided into two separate administrative procedures; AP 07B-003, “Offsite Dose Calculation Manual,” Revision 2, and AP 07B-004, “Offsite Dose Calculation Manual (Radiological Environmental Monitoring Program),” Revision 0. These revisions to the Offsite Dose Calculation Manual were issued on March 2, 1999. The inspectors determined that the revision changes did not reduce the effectiveness of the radioactive waste effluent radiation monitoring program and the radiological environmental monitoring program. The revision changes were documented in the appropriate annual radioactive effluent release report as required by the Offsite Dose Calculation Manual.

The 1997 and 1998 Annual Radioactive Effluent Release Reports were written in the format described in NRC Regulatory Guide 1.21, Revision 1, June 1974, and contained the required information. The annual radioactive effluent release reports were issued in accordance with the time requirements stated in the Technical Specifications and Offsite Dose Calculation Manual. The executive summaries provided a comprehensive summary of the year’s effluent data and included liquid and gaseous effluent performance trends relative to previous years.

c. Conclusions

Implementing procedures for the radioactive waste effluent program provided proper guidance. Revisions to the Offsite Dose Calculation Manual were appropriately implemented and did not reduce the effectiveness of the radioactive waste effluent

program. The 1997 and 1998 Annual Radioactive Effluent Release Reports were submitted in a timely manner, contained the required information, and included a comprehensive executive summary that provided liquid and gaseous effluent performance trends relative to previous years.

R5 Staff Training and Qualification

a. Inspection Scope (84750)

Personnel involved with the radioactive waste effluent training program were interviewed. Training and qualification programs for chemistry technicians, radwaste operators, and nuclear station operators involved in conducting the radioactive waste effluent management program were reviewed. Training and qualifications of the chemistry technicians, radwaste operators, and nuclear station operators were verified.

b. Observations and Findings

The inspectors determined that appropriate training and qualification programs were implemented for the chemistry technicians, radwaste operators, and nuclear station operators which included formal classroom training and on-the-job training. The review of the chemistry technician training program course materials revealed that the training materials were well organized and included the subject areas needed to independently sample and analyze liquid and gaseous effluents and prepare effluent batch release permits. Additionally, continuing training course material provided chemistry technicians with the appropriate topics to ensure that their technical competence was maintained.

The inspectors verified that 16 chemistry technicians had completed the required training to be shift qualified to independently perform radioactive waste effluent program activities. In addition, there was one new chemistry technician who was in the process of completing the required training and qualifications to be shift qualified. The inspectors determined that the staffing of the chemistry organization provided an adequate number of qualified and experienced personnel to effectively implement the radioactive waste effluent management program.

The inspectors reviewed the staffing of the radwaste operations shift crews. Based on the inspectors' review of the current radwaste operations shift staffing, the inspectors noted that 21 nuclear station operators were fully trained and qualified as radwaste operators. Each of the six operating shift crews had at least one qualified radwaste operator and several senior nuclear station operators assigned to each shift. The inspectors noted that there was no change in the qualified radwaste operations staff during the past 2 years. The inspectors determined that the staffing of the six operations shift crews was adequate to perform the required processing and releasing of radioactive waste effluents.

c. Conclusions

An effective radioactive waste effluent training program for chemistry technicians, radwaste operators, and nuclear station operators was implemented. The chemistry technician training program course materials were well organized and included the

subject areas needed to qualify chemistry technicians to independently sample and analyze liquid and gaseous effluents and prepare effluent batch release permits. The experience, training, and working knowledge of the chemistry and radwaste operations personnel met the training and qualification requirements.

R7 Quality Assurance in Radiation Protection and Chemistry Activities

a. Inspection Scope (84750)

The following items were reviewed:

- Qualifications of personnel who performed quality assurance department audits
- Quality assurance audits of the Offsite Dose Calculation Manual and areas of the radioactive waste effluent management program performed during 1998 and 1999
- Selected radioactive waste effluent management program Performance Improvement Requests

b. Observations and Findings

Audits

A review of the qualifications of the lead auditor and technical specialists involved in the oversight of the Offsite Dose Calculation Manual and the radioactive waste effluent management program identified that the lead auditor had extensive auditing and technical experience to perform effective audits of the radioactive waste effluent management program. The inspectors noted that the technical specialists used to assist the lead auditor in the performance of the audits also had extensive operational experience and knowledge of the program areas audited.

Three Quality Assurance Department Audit Reports K-490, “Plant Support,” (June 1998), K-499, “ODCM Supplemental,” (October 1998), and K-510, “Environmental Management,” (June 1999), which covered the Offsite Dose Calculation Manual and the radioactive waste effluent management program, were performed since the last inspection of this area in February 1998. The inspectors noted that the essential element matrices used for these three audits provided proper guidance so that appropriate program areas were reviewed. The inspectors determined that the combination of the three audits performed over the 12-month time period (June 1998 through June 1999) were intrusive and thorough, providing management with a comprehensive assessment of the Offsite Dose Calculation Manual and the radioactive waste effluent management program. A number of findings were identified in the three audits and were properly documented, tracked in the station’s Performance Improvement Request reporting system, and satisfactorily addressed in a timely manner. The inspectors determined that the scope and frequency of the three audits reviewed met the audit performance requirements.

However, the inspectors noted that the licensee had initiated a new continuous audit process that consisted of a combined audit of the following four areas: radiological environmental monitoring (12-month audit frequency), offsite dose calculation manual (24-month audit frequency), non-radiological effluent and environmental monitoring (12-month audit frequency), and chemical/rad-chemical control (24-month audit frequency). The inspectors understood that the continuous audit process was designed to perform combined audits of these program areas during two 6-month time periods May through October and November through April each year. The new process made it difficult for the inspectors to determine if the required frequencies were being met, because the start/stop dates overlapped and the frequencies were different. The inspectors discussed this matter with licensee management. The licensee stated that the continuous audit program would be reviewed and that the quality assurance procedures would be revised to clearly demonstrate that the above program audits would be performed and completed at the required frequencies.

Performance Improvement Requests

A review of selected radioactive waste effluent management program Performance Improvement Requests written since January 1, 1998, revealed that the licensee identified issues at the proper threshold to provide management with the information needed to assess the radioactive waste effluent management program. The review also identified that, in general, response timeliness was appropriate and, overall, corrective actions appeared to be effective to correct the issue identified.

c. Conclusions

Quality assurance oversight was effective. The lead auditor and technical specialists assigned to perform the audits of the radioactive waste effluent management program had technical and operating experience and were well qualified to perform the program evaluations. The audits were intrusive and thorough and provided management with a comprehensive assessment of the Offsite Dose Calculation Manual and the radioactive waste effluent management program. Audit findings were properly documented, tracked in the station's Performance Improvement Request reporting system, and satisfactorily addressed in a timely manner. Performance Improvement Requests identified issues at the proper threshold to provide management with the information needed to assess the radioactive waste effluent management program. The new continuous audit program (combined program audits) made it difficult to determine if the various program area audits were comprehensive and met audit frequency requirements.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at an exit meeting on December 17, 1999. The licensee acknowledged the findings presented. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

O. Maynard, President and Chief Executive Officer
B. McKinney, Vice President Operations and Plant Manager
R. Andrews, Regulatory Specialist, Licensing and Corrective Actions
M. Angus, Manager, Licensing and Corrective Action
M. Blow, Manager, Chemistry/Radiation Protection
S. Burkdoll, Supervisor, Chemistry/Health Physics Training
V. Canales, Supervisor, Quality Evaluations
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R. Flannigan, Manager, Nuclear Engineering
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D. Jacobs, Manager, Support Engineering
T. Jensen, Supervisor, Chemistry
D. Knox, Manager, Maintenance
S. Koenig, Manager, Performance Improvement and Assessment
T. Metcalf, Chemistry Technician, Chemistry/Radiation Protection
W. Norton, Manager, Design Engineering
D. Parks, Superintendent, Technical Training
J. Pippin, Manager, Training
C. Reekie, Engineering Specialist, Licensing and Corrective Action
R. Sims, Manager, Systems Engineering
J. Truelove, Supervisor, Chemistry
M. Westman, Superintendent, Operations Training
C. Younie, Manager, Operations

NRC

F. Brush, Senior Resident Inspector

LIST OF INSPECTION PROCEDURES USED

IP 84750 Radioactive Waste Treatment and Effluent and Environmental Monitoring

LIST OF DOCUMENTS REVIEWED

ORGANIZATION CHARTS

Chemistry/Health Physics Department - December 1999

Operating Crews - December 1999

TRAINING DOCUMENTATION

AP 30D-006, “Chemistry Technician Training Program,” Revision 4

Chemistry Initial Training Course Outline, Revision 24

Chemistry technician training records

Shift Chemist Evaluation Form

Selected chemistry technician lesson plans for effluent activities

Initial Nuclear Station Operator Program Course Outline, Revision 10

AP 30B-002, “Nuclear Station Operator Requalification Training,” Revision 5

Selected nuclear station operator training records

QUALITY ASSURANCE DOCUMENTS

Quality Evaluations Audit Schedule, Revision 15, dated September 13, 1999

Quality Assurance Essential Element Matrix for Offsite Dose Calculation Manual

Audits

Audit Report K-490, “Plant Support,” conducted March 3 through June 30, 1998

Audit Report K-499, “ODCM Supplemental,” conducted September 28 through October 9, 1998

Audit Report K-510, “Environmental Management (REMP/ODCM/EEMP),” conducted March 1 through June 25, 1999

Vendor Audits

NUPIC Joint Quality Assurance Audit of NCS Corporation, conducted December 8-10, 1998

NUPIC Joint Quality Assurance Audit of Teledyne Brown Engineering Environmental Service, conducted April 26-29, 1999

PROCEDURES

AP 02-008	"Verification of Analytical Performance," Revision 2
AP 02E-001	"Chemistry Calibration Program," Revision 11
AP 07B-003	"Offsite Dose Calculation Manual," Revision 2
CHA RC-001	"Gross Alpha Measurement," Revision 1
CHA RC-003	"Tritium Analysis," Revision 6
CHS AX-G01	"Sampling of the Unit and Radwaste Vents for Radioactive Gas and Tritium,' Revision 5
CHS AX-G02	"Exchange of Radioactive Gaseous Monitor Particulates and Iodine Filters," Revision 12
CHS AX-G03	"Sampling of Building Atmosphere for Radioactive Gas and Tritium," Revision 4

MISCELLANEOUS DOCUMENTS

Selected surveillance tests for liquid and gaseous radiation effluent monitor calibrations and channel checks

Selected surveillance tests for engineered-safety-feature ventilation systems

Selected radioactive waste effluent management program Performance Improvement Requests (01/01/98 - 12/15/99)

Annual Radioactive Effluent Release Reports for 1997 and 1998