



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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ARLINGTON, TEXAS 76011-8064

March 6, 2000

Randal K. Edington, Vice President - Operations
River Bend Station
Entergy Operations, Inc.
P.O. Box 220
St. Francisville, Louisiana 70775

SUBJECT: NRC INSPECTION REPORT NO. 50-458/00-04

Dear Mr. Edington:

This refers to the inspection conducted on February 14-17, 2000, at the River Bend Station facility. This inspection focused on the implementation of the radiological environmental monitoring program at the River Bend Station and River Bend Station environmental laboratory's implementation of Entergy's shared services agreement to perform radiological analyses of environmental samples collected at other Entergy facilities. The enclosed report presents the results of this inspection.

The radiological environmental and meteorological monitoring programs at the River Bend Station were effectively implemented. The River Bend Station environmental laboratory properly analyzed environmental samples collected at other Entergy facilities and transmitted the analytical results to the respective facilities in a timely manner in accordance with the Entergy shared services agreement.

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.: 50-458
License No.: NPF-47

Entergy Operations, Inc.

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NRC Inspection Report No.
50-458/00-04

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ENCLOSURE

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Docket No.: 50-458
License No.: NPF-47
Report No.: 50-458/00-04
Licensee: Entergy Operations, Inc.
Facility: River Bend Station
Location: 5485 U.S. Highway 61
St. Francisville, Louisiana
Dates: February 14-17, 2000
Inspector: J. Blair Nicholas, Ph.D., Senior Health Physicist
Plant Support Branch
Approved By: Gail M. Good, Chief, Plant Support Branch
Division of Reactor Safety
Attachment: Supplemental Information

EXECUTIVE SUMMARY

River Bend Station NRC Inspection Report No. 50-458/00-04

This routine, announced inspection reviewed the implementation of the radiological environmental monitoring and the meteorological monitoring programs. Training and qualifications, quality assurance oversight, facilities and equipment, and annual reports were also reviewed.

Plant Support

- The radiological environmental monitoring program was effectively implemented. All required environmental sampling and analyses were properly performed. Environmental sampling locations at the River Bend Station met the radiological environmental monitoring program requirements and were operational and properly maintained. Environmental samples from all four Entergy Operations nuclear power stations were analyzed in accordance with Entergy's shared services agreement for radiological analyses of environmental samples. The 1998 land use census was properly conducted and documented in the radiological environmental operating report. The operation of the station resulted in no observed radiological impact on the environment (Section R1.1)
- An effective meteorological monitoring program was implemented. The performance of the meteorological monitoring program met provisions of the Technical Requirements Manual and agreed with Regulatory Guide 1.23 guidance. Data recovery for 1998 and 1999 was greater than 97 percent, indicating an excellent meteorological monitoring program (Section R1.2).
- Sufficient supplies and environmental sampling equipment were available and properly maintained. Environmental sampling stations were properly maintained with operable and calibrated equipment. The environmental laboratory radiochemistry analytical instruments were properly calibrated and maintained (Section R2.2).
- Changes to the radiological environmental monitoring program were appropriately made in the Offsite Dose Calculation Manual and Technical Requirements Manual. Descriptive radiological environmental monitoring program implementing procedures were maintained (Section R3.1).
- The annual radiological environmental operating reports contained the required information and were submitted in accordance with Section 5.6.2 of the Technical Specifications and the Technical Requirements Manual (Section R3.2).
- The training and qualification programs for environmental group personnel were effectively implemented. A trained, experienced, and qualified environmental laboratory staff were properly conducting the radiological environmental monitoring program (Section R5).

- Comprehensive performance-based annual audits, performed by qualified and experienced auditors and technical specialists, effectively evaluated the performance and implementation of the radiological environmental monitoring and meteorological monitoring programs. The Entergy Operations corporate office performed a thorough compliance-based assessment of the environmental laboratory's performance. The Waterford-3 quality assurance department conducted comprehensive biennial audits, which included an assessment of the environmental thermoluminescent dosimetry program. Good performance was noted in identifying problems, performing evaluations and assessments, and implementing timely corrective actions (Sections R7.1 and R7.2).

Report Details

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Radiological Environmental Monitoring Program

a. Inspection Scope (84750)

The radiological environmental monitoring program was reviewed to determine compliance with the requirements in the Technical Requirements Manual and Offsite Dose Calculation Manual. Selected environmental media sampling stations were inspected.

b. Observations and Findings

The inspector accompanied and observed the chemistry environmental technician collect upstream and downstream surface water samples from the Mississippi River. The surface water sampling was performed according to procedure, and proper sampling techniques were observed. The inspector also observed the chemistry environmental technician enter the surface water sample data into the environmental laboratory computer data base for tracking purposes, prepare the samples for the required radiochemistry analyses in the environmental laboratory, perform the gamma scan and tritium analyses, and enter the analytical results into the laboratory computer data base for review by the senior environmental specialist.

The inspector also inspected selected environmental sample locations for airborne samples, vegetation samples, thermoluminescent dosimeters, and ground water samples. The collection, processing, and analyses of the radiological environmental samples were performed in accordance with Technical Requirements Manual and Offsite Dose Calculation Manual requirements. The inspector verified that the environmental sample locations met the location description requirements specified in Table 4.1 in the Offsite Dose Calculation Manual and Table 3.12.1-1 in the Technical Requirements Manual. The inspector noted that the environmental thermoluminescent dosimeters were processed by the Waterford-3 dosimetry group in accordance with Entergy's shared services agreement.

Environmental samples from all four Entergy Operations nuclear power stations were properly analyzed by the Entergy Operations environmental laboratory located at the River Bend Station in accordance with Entergy's shared services agreement for radiological analyses of environmental samples. The inspector observed the chemistry environmental technician receive shipments of air particulate and charcoal cartridge samples from the Grand Gulf Nuclear Station and Arkansas Nuclear One Station and a water sample from the condensate storage tank dike at the Grand Gulf Station. The sample data were entered into the laboratory data base, the required analyses were

performed, and the analytical result reports were prepared for review by the senior environmental specialist prior to sending the analysis results to the appropriate Entergy facility.

A review of sample collection and analysis records for all four Entergy facilities revealed that the collection and analyses of the environmental samples were performed in accordance with environmental laboratory procedures and entered into the laboratory computer data base. These records were meticulously maintained and demonstrated a high level of data quality control. The environmental sample analytical results were transmitted to the respective Entergy facilities in a timely manner in accordance with the Entergy shared services agreement.

The 1998 land use census was properly performed, and the land use census results were documented, as required, in the annual radiological environmental operating report. Based on the results of the land use census, no changes were made to the environmental monitoring program.

Comprehensive annual radiological environmental operating reports were submitted to the NRC within the time requirements specified in the Technical Requirements Manual and the Offsite Dose Calculation Manual. Summaries of the 1998 and 1999 environmental sample analyses results showed that all sample analyses indicated no observed radiological impacts on the environment that could be attributed to station operation. An assessment of the preoperational and operational environmental data showed no changes to the environmental radiation levels due to station operations.

c. Conclusions

The radiological environmental monitoring program was effectively implemented. All required environmental sampling and analyses were properly performed. Environmental sampling locations at the River Bend Station met the radiological environmental monitoring program requirements and were operational and properly maintained. Environmental samples from all four Entergy Operations nuclear power stations were analyzed in accordance with Entergy's shared services agreement for radiological analyses of environmental samples. The 1998 land use census was properly conducted and documented in the radiological environmental operating report. The operation of the station resulted in no observed radiological impact on the environment.

R1.2 Meteorological Monitoring Program

a. Inspection Scope (84750)

The meteorological monitoring program was reviewed to determine agreement with the recommendations in NRC Regulatory Guide 1.23 and compliance with the requirements in the Technical Requirements Manual. The inspector reviewed data collection and data displays at station facilities.

b. Observations and Findings

The inspector noted that the meteorological tower's primary and secondary instrumentation and configuration agreed with the guidance in Regulatory Guide 1.23. Meteorological instrument redundancy was provided at two elevations. Backup power was provided by an uninterruptible power supply and a propane powered electrical generator.

The inspector verified that appropriate meteorological data was transmitted via the digital radiation monitoring system and displayed in the station's emergency facilities, including the control room, technical support center, emergency operations facility, and the environmental laboratory facility. The meteorological data recovery rates during 1998 and 1999 were greater than 90 percent as recommended by Regulatory Guide 1.23. Specifically, the data recovery rate for 1998 was 97.9 percent and 99.1 percent for 1999.

c. Conclusions

An effective meteorological monitoring program was implemented. The performance of the meteorological monitoring program met provisions of the Technical Requirements Manual and agreed with Regulatory Guide 1.23 guidance. Data recovery for 1998 and 1999 was greater than 97 percent, indicating an excellent meteorological monitoring program.

R2 Status of Radiological Protection and Chemistry Facilities and Equipment

R2.1 Environmental Monitoring Equipment

a. Inspection Scope (84750)

Selected environmental sampling stations were inspected to verify that the stations were properly maintained and that all sampling equipment was operable and properly calibrated. The Entergy Operations corporate environmental laboratory facility located on site was inspected to verify that sufficient supplies, equipment, analytical instrumentation, and spare calibrated air samplers were available to perform the licensee's radiological environmental sampling program. The licensee's maintenance and calibration program for the air sampling equipment was reviewed.

b. Observations and Findings

The inspector verified that all air samplers in the field were operational and properly calibrated. A timing device was used with each air sampler to monitor its time of operation and to account for any power outages during the sampling period. Radiation protection department technicians were responsible for the maintenance and calibration of the air samplers. The inspector observed a radiation protection technician perform the calibration of an environmental air sampler. The inspector verified, by review of calibration records, that the environmental air samplers were properly maintained and

calibrated semiannually. Proper maintenance and calibration records were maintained for each environmental air sampler. A sufficient supply of calibrated air samplers was maintained.

All environmental samples were analyzed in the environmental laboratory located on site. The inspector verified that the laboratory analytical instrumentation was properly calibrated and maintained. An excellent quality control program was implemented. The environmental laboratory participated in an interlaboratory comparison program as required by the Technical Requirements Manual and Offsite Dose Calculation Manual. The analytical results from the interlaboratory comparison program were reported, as required, in the annual radiological environmental operating report. The 1998 and 1999 analytical interlaboratory performance results were within three standard deviations of the known certified results which documented an excellent performance.

The inspector inspected the environmental laboratory where environmental sampling equipment was stored, and environmental samples were prepared for analyses. The environmental laboratory facility was stocked with the necessary equipment and sufficient supplies to perform the required sampling activities at the River Bend Station and perform the required environmental sample analyses for the four Entergy Operations nuclear power facilities.

c. Conclusions

Sufficient supplies and environmental sampling equipment were available and properly maintained. Environmental sampling stations were properly maintained with operable and calibrated equipment. The environmental laboratory radiochemistry analytical instruments were properly calibrated and maintained.

R2.2 Meteorological Monitoring Equipment

a. Inspection Scope (84750)

The meteorological tower instrumentation was inspected. Instrument calibration procedures and records were reviewed to ensure that the meteorological instrumentation was operable and properly calibrated and maintained in accordance with the Technical Requirements Manual and the guidance in Regulatory Guide 1.23.

b. Observations and Findings

The inspector toured the meteorological tower with the system engineers responsible for maintaining the operability of the meteorological tower instrumentation and the lead senior environmental specialist responsible for monitoring the meteorological instrumentation reliability and performance. The meteorological tower was equipped with primary and secondary instrumentation for wind speed, wind direction, and temperature measurement at the 30- and 150-foot levels. Daily channel checks were performed by the operations department personnel, and semiannual calibrations of the meteorological sensing and recording instrumentation were performed by instrument and controls department personnel. The reviewed maintenance and calibration records

documented that the meteorological monitoring instruments, including sensing and data recording equipment, were properly tested, calibrated, and maintained in accordance with the Technical Requirements Manual.

The inspector accompanied the lead senior environmental specialist and observed the performance of the daily meteorological monitoring equipment inspection. The inspector reviewed completed inspection logs for the time period June 1998 through February 2000 and verified that the meteorological monitoring equipment inspections were properly performed at the required frequency in accordance with Environmental Services Procedure ESP-8-012, "Routine Performance Checks of Meteorological Monitoring Equipment," Revision 9.

c. Conclusions

The meteorological tower's instrumentation was operational, inspected, maintained, and properly calibrated. Calibrations were performed at the frequency specified in the Technical Requirements Manual.

R3 Procedures and Documentation

R3.1 Radiological Environmental Monitoring Program Implementing Procedures

a. Inspection Scope (84750)

The inspector reviewed the changes to the radiological environmental monitoring program and implementing procedures.

b. Observations and Findings

The inspector reviewed the licensee amendment request submitted since the last NRC inspection of this area conducted in June 1998, which requested a reduction in the radiological environmental monitoring program, as described in Section 3.12 of the Technical Requirements Manual, to eliminate unnecessary sampling and radiochemical analyses. This environmental program sampling reduction was permitted after three years of commercial operation by Regulatory Guide 4.1, "Program for Monitoring Radioactivity in the Environs of Nuclear Power Plants," Regulatory Guide 4.8, "Environmental Technical Specifications for Nuclear Power Plants," and the Branch Technical Position on the Environmental Technical Specifications for Nuclear Power Plants," Revision 1. The reduction was allowed provided that the licensee was able to demonstrate, based on historical environmental data, that there was no discernible increase in the radioactivity and dose attributed to the operation of the River Bend Station.

The inspector reviewed the following changes to the radiological environmental monitoring program and the licensee's bases for the changes. The following changes were determined to be acceptable and justified as allowed by the regulatory documents listed above and the inspector's review of the licensee's 10 CFR 50.59 safety evaluation.

The inspector verified that the changes made to the radiological environmental monitoring program, as described in the Technical Requirements Manual and Offsite Dose Calculation Manual since the last inspection, did not result in a decrease of the effectiveness of the program. The following changes were made to the radiological environmental monitoring program:

River Bend Radiological Environmental Monitoring Program Changes

Pathway	Sample	Number of Samples and Locations		Frequency
Airborne	Air	Old	Samples from 5 locations - 3 samples close to the SITE BOUNDARY, in different sectors with highest D/Q - 1 sample from vicinity of a community with highest D/Q - 1 sample from control location, for example 15-30 km distance and in the least prevalent wind direction	Weekly
		New	Samples from 4 locations - 2 samples close to the SITE BOUNDARY, in different sectors with highest D/Q - 1 sample from vicinity of a community with highest D/Q - 1 sample from control location, for example 15-30 km distance and in the least prevalent wind direction (Gamma analysis on quarterly air particulate composites discontinued)	Once every two weeks
Direct Radiation	TLDs	Old	40 stations - Inner ring of 16 stations in the general area of the SITE BOUNDARY - Outer ring of 16 stations in the 6- to 8 km range from the site - Eight stations in special interest areas such as population centers, nearby residences, schools, and in 1 or 2 areas to serve as control stations	Quarterly
		New	24 stations - One ring of 16 stations, one in each meteorological sector in the general area of the SITE BOUNDARY - Eight stations in special interest areas such as population centers, nearby residences, schools, and in 1 or 2 areas to serve as control stations	Quarterly
Waterborne	Surface Water	Old	1 sample upstream and 1 sample downstream 1 sample discharge line	Monthly or Quarterly composite Monthly Composite
		New	1 sample upstream and 1 sample downstream (Discontinued discharge line sample)	Quarterly (grabs)
	Ground Water	Old	Samples from 1 or 2 locations only if likely to be affected	Quarterly
		New	Samples from 1 or 2 locations only if likely to be affected	Semiannually
	Sediment	Old	1 sample from downstream area with existing or potential recreational value	Semiannually
		New	1 sample from downstream area with existing or potential recreational value	Annually

Pathway	Sample	Number of Samples and Locations		Frequency
Ingestion	Milk	Old	3 samples within 5 km, if none, one sample in 5 to 8 km range 1 sample from a control location within 15 to 30 km	Semimonthly
		New	If commercially available, 1 sample from milk in animals within 8 km distance where doses are calculated to be greater than 1 mrem per year 1 sample from milking animals at a control location 15-30 km distance when an indicator location exits	Quarterly
	Fish	Old	1 sample of three species in vicinity of plant discharge point 1 sample of three species in an area uninfluenced by plant discharge	Semiannually
		New	1 sample of one commercially and/or recreationally important species in vicinity of plant discharge area 1 sample of one similar species in areas not influenced by plant discharge	Annually
	Food Products	Old	2 locations in sectors with highest D/Q - 3 samples from each location 1 control location 15 to 30 km - 3 samples	Monthly
		New	1 sample of one type of broadleaf vegetation grown near the SITE BOUNDARY of highest predicted annual average ground-level D/Q, if milk sampling is not performed 1 sample of one type of broadleaf vegetation grown 15-30 km distance, if milk sampling is not performed	Quarterly
Land Use Census	Not Applicable	Old	Conduct census as required by regulations	Annually
		New	Conduct census as required by regulations	Once Every Two Years

The radiological environmental monitoring program implementing procedures described the responsibilities and requirements for the collection of environmental samples at the River Bend Station. The procedures also provided instruction for tracking and documenting samples received for analysis, the analysis requirements, and reporting of analysis results for environmental samples collected at the four Entergy Operations nuclear power facilities. The procedures contained sufficient detail for personnel to effectively implement the licensee's radiological environmental monitoring program and perform and report the analyses results of the environmental samples collected at the four Entergy Operations nuclear power facilities in accordance with Entergy's shared services agreement. The inspector determined that the requirements in the Technical Requirements Manual and the Offsite Dose Calculation Manual were appropriately described in the environmental laboratory's procedures.

c. Conclusions

Changes to the radiological environmental monitoring program were appropriately made in the Offsite Dose Calculation Manual and Technical Requirements Manual. Descriptive radiological environmental monitoring program implementing procedures were maintained.

R3.2 Annual Reports

a. Inspection Scope (84750)

The 1998 annual radiological environmental operating report was reviewed to determine compliance with the Technical Specifications and Technical Requirements Manual. The annual reports were reviewed relative to the radiological environmental monitoring program for data omissions, anomalous measurements, trends in the data, and interlaboratory analysis comparisons.

b. Observations and Findings

Sample data in the 1998 annual radiological environmental operating report documented that the required sampling, analyses, and reporting requirements were met. Program discrepancies and missed samples were properly reported. The results of the Entergy Operations environmental laboratory's participation in an interlaboratory comparison program were reported as required. The results of the land use census were documented as required. The annual radiological environmental operating report was submitted in a timely manner and contained the required information.

c. Conclusion

The annual radiological environmental operating reports contained the required information and were submitted in accordance with Section 5.6.2 of the Technical Specifications and the Technical Requirements Manual.

R4 **Staff Knowledge and Performance**

a. Inspection Scope (84750)

The chemistry department's environmental personnel were observed and interviewed to determine their knowledge of the radiological environmental monitoring program sampling and analyses requirements and implementing procedures.

b. Observations and Findings

The inspector observed that good radiological sample handling practices were used by the chemistry environmental technician to maintain sample integrity. Sample collection, receipt, tracking documentation, computer data entry, preparation for analyses, and analysis activities observed were conducted in accordance with approved procedures. The inspector determined that the chemistry department's environmental personnel were very familiar with the requirements of the radiological environmental monitoring programs at the four Entergy Operations nuclear power facilities, and they maintained a high level of understanding and performance of sample analyses and reporting of analytical results.

c. Conclusion

The knowledge and performance of the chemistry department personnel responsible for implementing the radiological environmental monitoring program were excellent.

R5 Staff Training and Qualification

a. Inspection Scope (84750)

The training and qualification programs for the chemistry department's technical staff responsible for implementing the radiological environmental monitoring program were reviewed.

b. Observations and Findings

The inspector determined that proper training and qualification programs were implemented. The inspector verified that the two senior environmental specialists and the chemistry environmental technician were trained, experienced, and met the qualifications for the independent work activities they performed.

c. Conclusions

The training and qualification programs for environmental group personnel were effectively implemented. A trained, experienced, and qualified environmental laboratory staff were properly conducting the radiological environmental monitoring program.

R7 Quality Assurance Program

R7.1 Radiological Environmental Monitoring Quality Assurance Program

a. Inspection Scope (84750)

Annual quality assurance audits and a departmental self-assessment of the radiological environmental monitoring and meteorological monitoring programs were reviewed.

b. Observations and Findings

The 1998 and 1999 annual performance-based quality assurance audits of the radiological environmental monitoring and meteorological monitoring programs were comprehensive and provided management with good insights. The audits were performed by quality assurance auditors who had appropriate knowledge and experience to properly assess performance and implementation of the radiological environmental monitoring and meteorological monitoring programs. The auditors were assisted by technical specialists from other nuclear power plants. The audits evaluated the radiological environmental and meteorological monitoring programs and were effective in identifying items for improvement. The quality assurance audits of the radiological environmental monitoring program also included an appropriate assessment

of the Entergy Operations environmental laboratory's performance. In addition, the Entergy Operations corporate office conducted a thorough compliance-based assessment of the corporate environmental laboratory located at the River Bend Station.

The inspector determined that the quality assurance auditors and technical specialists had appropriate knowledge and experience to properly assess performance and implementation of the radiological environmental monitoring program and the performance of the Entergy Operations environmental laboratory.

The Waterford-3 quality assurance department conducted comprehensive biennial audits of the health physics internal and external exposure control and dosimetry programs. The audit of the dosimetry program included the processing of environmental thermoluminescent dosimeters. These audits were supplemented with internal dosimetry laboratory quality system annual reviews, conducted by the dosimetry laboratory quality manager, to assess and evaluate the dosimetry program as specified in Section 5.18.1 of the Waterford-3 Health Physics Procedure HP-001-100, "Dosimetry Laboratory Quality Manual," Revision 1, and in accordance with Company Policy No. PL-126, "Site Providing Services to Other Sites," Revision 0.

c. Conclusions

Comprehensive performance-based annual audits, performed by qualified and experienced auditors and technical specialists, effectively evaluated the performance and implementation of the radiological environmental monitoring and meteorological monitoring programs. The Entergy Operations corporate office performed a thorough compliance-based assessment of the environmental laboratory's performance. The Waterford-3 quality assurance department conducted comprehensive biennial audits, which included an assessment of the environmental thermoluminescent dosimetry program.

R7.2 Condition Reports and Corrective Actions

a. Inspection Scope (84750)

The inspector reviewed selected condition reports to evaluate the effectiveness of the licensee's controls in identifying, resolving, and preventing problems in the radiological environmental monitoring and the meteorological monitoring programs.

b. Observations and Findings

Condition reports issued between June 1998 and February 2000 in the areas of the radiological environmental monitoring and meteorological monitoring programs revealed that licensee personnel used this reporting system as needed and had a proper threshold for identifying problems. Condition reports were initiated for problems identified during quality assurance audits and the routine implementation of the radiological environmental monitoring and meteorological monitoring programs. The condition reports were effectively used to track and trend identified problems. Overall, responses to the condition reports were timely, and the corrective actions to the

identified issues were sufficient to resolve repeat problems.

c. Conclusion

Good performance was noted in identifying problems, performing evaluations and assessments, and implementing timely corrective actions.

V. Management Meetings

X1 Exit Meeting Summary

The inspector presented the inspection results to members of licensee management at an exit meeting conducted on February 17, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

ATTACHMENT

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

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W. Trudell, Manager, Corrective Action and Assessment, Nuclear Safety & Regulatory Affairs
D. Wells, Superintendent, Radiation Protection

NRC

T. Pruett, Senior Resident Inspector
N. Garrett, Resident Inspector

INSPECTION PROCEDURE USED

IP 84750 Radioactive Waste Treatment and Effluent and Environmental Monitoring

LIST OF DOCUMENTS REVIEWED

ORGANIZATION CHARTS

Chemistry Department - February 2000

TRAINING DOCUMENTATION

Computerized training records for senior environmental specialists and senior nuclear chemistry technician

TPP-7-017 "Training and Qualification of Nuclear Chemistry Technicians," Revision 7

CSP-0003 "Chemistry Personnel Selection and Qualification", Revision 14

ESP-8-002 "Qualification and Training of River Bend Station Environmental Services Group Personnel," Revision 9A

QUALITY ASSURANCE DOCUMENTS

2000 and 2001 Quality Assurance Audit Schedule

"Quality Assurance Program Manual," Revision 2

QAI-2.1 "Audit Process," Revision 18

Waterford-3 Health Physics Procedure HP-001-100, "Dosimetry Laboratory Quality Manual," Revision 1

Nuclear Management Manual, Company Policy No, PL-126, "Site Providing Services to Other Sites," Revision 0

Quality Assurance Audits and Corporate Assessment

Audit Report 98-06-I-ODCM/REMP/ENV/EFF, "River Bend Station Audit of Effluent and Environmental Monitoring Programs," June 22-26, 1998

Audit Report 99-06-I-REMP/ENV/EFF, "River Bend Station Quality Assurance Audit of the Radiological Environmental Monitoring Program, Non-Radiological Environmental Monitoring Program, and Radiological Effluents Program," June 7-11, 1999

River Bend Station Radiological Environmental Monitoring Program Laboratory Assessment conducted March 30-31, 1999

Waterford-3 Quality Assurance Audit Report SA-98-022.1, "Radiological Environmental Monitoring Program," January 29 through March 20, 1998

Waterford-3 Quality Assurance Audit Report SA-97-009.1, "Health Physics External and Internal Exposure Control and Dosimetry," June 26 through September 23, 1997

Waterford-3 Quality Assurance Audit Report SA-97-009.1, "Health Physics External and Internal Exposure Control and Dosimetry," June 28 through August 9, 1999

Waterford-3 Dosimetry Laboratory Quality System Annual Review conducted July 1998

Waterford-3 Dosimetry Laboratory Quality System Annual Review conducted June 1999

PROCEDURES

- ESP-8-003 "Document and Records Management for River Bend Station Environmental Services Group," Revision 6
- ESP-8-005 "Assessment of the Reliability of Results of the Radiological Environmental Monitoring Program," Revision 7
- ESP-8-012 "Routine Performance Checks of Meteorological Monitoring Equipment," Revision 9
- ESP-8-013 "Data Management for Meteorological Monitoring Program," Revision 7B
- ESP-8-021 "Sampling of Water for Radiological Environmental Monitoring," Revision 11
- ESP-8-023 "Sampling of Airborne Radioiodine and Particulates for Radiological Environmental Monitoring," Revision 10
- ESP-8-025 "Sampling of Aquatic Sediments for Radiological Environmental Monitoring," Revision 7
- ESP-8-027 "Sampling of Botanical Specimens for Radiological Environmental Monitoring," Revision 7
- ESP-8-028 "Deployment and Retrieval of Environmental Thermoluminescence Dosimeters," Revision 8
- ESP-8-031 "Analysis of Tritium Content in Water," Revision 10
- ESP-8-032 "Analysis of Gross Alpha and Gross Beta Activity on Particulate Filters," Revision 6A
- ESP-8-033 "Analysis of Gross Beta Activity in Water," Revision 6B
- ESP-8-036 "Gamma Isotopic Analysis of Environmental Samples," Revision 8A
- ESP-8-037 "Preparation of Environmental Samples for Gamma Isotopic Analysis," Revision 7
- ESP-8-043 "Calibration and Instrument Performance Assessment of the Packard Model 2700 Liquid Scintillation Analyzer," Revision 8
- ESP-8-044 "Maintenance, Performance Checks, and Calibration of the Canberra Industries Model 2400FP Alpha/Beta Counting System," Revision 6A
- ESP-8-050 "Conduct of the Radiological Environmental Monitoring Program," Revision 12

- ESP-8-051 "Land Use Census," Revision 7
- ESP-8-052 "Interlaboratory Comparison Program for Radiological Environmental Monitoring," Revision 6A
- ESP-8-054 "Calibration of the Environmental Gamma Ray Spectroscopy System," Revision 8

SURVEILLANCE TESTS

- STP-555-4201 "Meteorological Monitoring - Wind Speed Elevation 30-foot (Primary) Calibration Test," Revision 11
- STP-555-4202 "Meteorological Monitoring - Wind Speed Elevation 30-foot (Secondary) Calibration Test," Revision 9
- STP-555-4203 "Meteorological Monitoring - Wind Speed Elevation 150-foot (Primary) Calibration Test," Revision 10
- STP-555-4204 "Meteorological Monitoring - Wind Speed Elevation 150-foot (Secondary) Calibration Test," Revision 9
- STP-555-4205 "Meteorological Monitoring - Wind Direction Elevation 30-foot (Primary) Calibration Test," Revision 8A
- STP-555-4206 "Meteorological Monitoring - Wind Direction Elevation 30-foot (Secondary) Calibration Test," Revision 8A
- STP-555-4207 "Meteorological Monitoring - Wind Direction Elevation 150-foot (Primary) Calibration Test," Revision 9A
- STP-555-4208 "Meteorological Monitoring - Wind Direction Elevation 150-foot (Secondary) Calibration Test," Revision 9A
- STP-555-4209 "Meteorological Monitoring - Air Temperature Difference Elevation 30/150 foot (Primary) Semiannual Channel Calibration," Revision 11

REPORTS

Annual Radiological Environmental Operating Report - 1998

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MISCELLANEOUS DOCUMENTS

Land Use Census - 1998