



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406**

October 19, 2001

Mr. K. Heider
Vice President - Operations and Decommissioning
Connecticut Yankee Atomic Power Company
362 Injun Hollow Road
East Hampton, CT 06424-3099

SUBJECT: NRC INTEGRATED INSPECTION REPORT 50-213/01-002

Dear Mr. Heider:

On September 21, 2001, the NRC completed an inspection at the Haddam Neck Plant which began on April 28, 2001. The findings of the inspection were discussed with Mr. Noah Fetherston, and others by telephone on September 25, 2001. The enclosed report presents the results of that inspection.

Your decommissioning operations and plant support programs were inspected during this period. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspectors. Effective programs were observed for the safe wet storage of spent nuclear fuel. Implementation of your radiation protection program was determined to be generally effective, and dismantlement of equipment continued to be conducted safely. Radioactive waste management, including the shipment of radioactive waste for disposal, was generally adequate; however, one violation was identified.

Based on the results of this inspection, the NRC has determined that one Severity Level IV violation of NRC requirements occurred, a failure to have a process control program or procedure to certify the free standing liquid criteria of 10 CFR 61.56, as required by Technical Specifications 6.6.2. However, because this violation was of low safety significance, was entered into your corrective action program, and effectively corrected, it is being treated as a Non-Cited Violation (NCV), consistent with Section VI.A of the NRC Enforcement Policy. The NCV is described in the subject inspection report. If you contest the violation or severity level of the NCV, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; and the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Mr. K. Heider

2

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) and will be accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html>. No reply to this letter is required.

Sincerely,

/RA/

Ronald R. Bellamy, Chief
Decommissioning and Laboratory Branch
Division of Nuclear Material Safety

Docket No. 50-213
License No. DPR-61

Enclosure:
NRC Inspection Report No. 50-213/01-002

cc w/encl:
R. Mellor, President and Chief Executive Officer
T. Bennet, Vice President and Chief Financial Officer
N. Fetherston, Site Manager
R. M. Mitchell, Unit Manager
M. D. Cavanaugh, Communications Manager
G. van Noordennen, Regulatory Affairs Manager
R. K. Gad, III, CYAPCO Counsel
R. Bassilakis, Citizens Awareness Network
J. Brooks, CT Attorney General Office
T. Bondi, Town of Haddam
T. Concannon, NEAC
State of Connecticut SLO

U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Docket No.: 50-213
License No.: DPR-61
Report No.: 50-213/01-002
Licensee: Connecticut Yankee Atomic Power Company (CYAPCO)
P. O. Box 270
Hartford, CT 06141-0270
Facility: Haddam Neck Station
Location: Haddam, Connecticut
Dates: April 28, 2001 through September 21, 2001
Inspectors: Marie Miller, Senior Health Physicist
Laurie Peluso, Health Physicist
John Wray, Health Physicist
Approved by: Ronald Bellamy, Chief, Decommissioning and Laboratory Branch
Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Haddam Neck Station
NRC Inspection Report No. 50-213/01-002

This routine inspection included aspects of licensee activities regarding dismantlement and decommissioning of the facility. The report covers a five month period of inspection by regional NRC personnel, and includes reviews and assessments of operation, maintenance and surveillance for spent fuel safety, organizational changes, receipt of Independent Spent Fuel Storage Installation (ISFSI) components, and plant support activities related to radiation protection and the radioactive waste shipping programs.

Decommissioning Operations

The licensee's organization was maintained in accordance with regulatory requirements. The licensee's staff is sufficient to maintain quality and safety commensurate with the conduct of decommissioning activities.

The licensee initiated an investigation of the correlation of tritium concentrations between the external containment mat sump and groundwater monitoring wells. The investigation was necessary to address site characterization and liquid effluent pathways, and to provide detailed data to support that effluent releases of tritium to the environment were monitored. Until the licensee provides a completed document to support that effluent releases of tritium were effectively controlled and monitored, this matter is considered an Unresolved Item.

Timely and effective security enhancements were implemented following the terrorist events of September 11, 2001.

Decommissioning Status of Facilities and Equipment

Dismantlement and removal of equipment and components continued to be conducted in a safe and efficient manner in accordance with work packages and release survey plans.

While construction of the ISFSI facility remains on hold pending local government siting decisions, receipt and storage of fuel storage cask liners and fabrication of other major components has begun.

Spent Fuel Pool Safety

The licensee effectively maintained the structures, systems and components associated with safe storage of spent fuel. The licensee adequately assessed the availability and operability of the spent fuel cooling pump. Post-maintenance testing was performed to verify pump operability. The licensee's established performance goals were achieved and were sufficient to provide reasonable assurance that the systems and components were capable of fulfilling intended functions. Based on the above findings and observations, an effective maintenance and surveillance program relative to safe storage, maintenance and control of spent fuel, was implemented.

Plant Support and Radiological Controls

The licensee maintained and implemented an effective radioactive liquid and gaseous effluent control program. Procedures were effectively implemented and the licensee ensured that projected doses to the public were within regulatory requirements.

The licensee maintained an adequate program for Radiation Monitoring System (RMS) calibration.

The licensee implemented an effective radiation protection program for radiologically significant work activities. The licensee's relocated health physics control point provided adequate control to the Radiologically Controlled Area (RCA). Readiness reviews and pre-job briefings for all workers assigned to a specific task were routinely used to ensure procedure compliance and to provide current radiological and personal safety conditions.

The licensee completed its corrective actions, which included verification tests and procedural improvements, to its process control program to improve its solid radioactive waste program. Shipments of large components for radiological disposal continued to be adequately controlled and documented.

The licensee maintained and implemented an adequate As Low As Reasonably Achievable (ALARA) program during the reactor segmentation project.

The licensee's Quality Assurance (QA) audit program regarding the radioactive effluent control program was effectively implemented.

The licensee has maintained an effective self-assessment and condition reporting program with an adequate low threshold for reporting problems. Focused management attention resulted in effective and timely corrective actions.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	ii
TABLE OF CONTENTS.....	iv
REPORT DETAILS	1
Summary of Facility Activities	1
<u>I. Decommissioning Operations</u>	1
O1 Conduct of Operations	1
<u>II. Decommissioning Status of Facilities and Equipment</u>	3
O2 Decommissioning Status of Facilities and Equipment	3
O2.1 <u>Equipment Dismantlement</u>	3
O3 Conduct of Operations	5
O3.1 <u>Maintenance and Surveillance Program</u>	5
<u>IV. Plant Support and Radiological Controls</u>	6
R1 Radiological Protection Controls	6
R1.3 <u>Occupational Exposure Controls</u>	7
R1.4 <u>Radioactive Waste Management and Transportation</u>	8
R7.2 <u>Self-Assessment and Corrective Action Program</u>	11
R8 Status of Previous Radiation Protection Items	12
<u>V. Management Meetings</u>	12
X1 Exit Meeting Summary	12
X2 Other Meetings	12
PARTIAL LIST OF PERSONS CONTACTED	14
INSPECTION PROCEDURES USED	15
ITEMS OPEN, CLOSED, AND DISCUSSED	15
LIST OF ACRONYMS USED	16

REPORT DETAILS

Summary of Facility Activities

The plant was maintained in a permanently shutdown condition during this inspection period. The spent fuel remains in storage in the spent fuel pool and evaluations continued for possible long-term storage of the spent fuel in dry casks onsite. Dismantlement and removal of major plant equipment and structures continued with removal of equipment from the Primary Auxiliary Building and the beginning of dismantlement activities in the Turbine Building. The last two Steam Generator Lower Assemblies were transported offsite by barge for burial at the Barnwell Radioactive Waste Disposal facility. The pressurizer was shipped offsite by truck and rail car for burial at the Envirocare Radioactive Waste Disposal Facility.

I. Decommissioning Operations

O1 Conduct of Operations

O1.1 Organization

a. Inspection Scope (36801)

The inspector reviewed the licensee's site organization, staffing, and qualifications to determine whether the licensee and contractor organization, staffing, and qualifications were in accordance with regulatory requirements. The recent change of the Decommissioning Operations Contractor (DOC) Project Manager in early May 2001, the interim assignment, effective July 30, 2001, of a new Safety Oversight Manager, which includes the position of the licensee's Health Physics Manager as defined in Technical Specifications (TS), and the addition of several senior health physics technicians since January 2001, were also evaluated through discussions and review of resumes and qualification records.

b. Observations and Findings

The DOC submitted correspondence to the licensee to formally request approval of the new Project Manager. The DOC Project Manager met with the inspector to discuss his approach to address projects such as the demobilization from the reactor pressure vessel segmentation and improvements to the solid radioactive waste management program. The resume of the interim Safety Oversight Manager listed approximately twenty-five years of nuclear facility radiation protection experience, including the last four years as a Connecticut Yankee (CY) radiation protection supervisor.

The inspector noted a comprehensive initial training and qualification process for senior health physics technicians. Records were computerized, and appeared accurate based on a comparison to attendance lists and/or test records. Training for new hires was completed in a timely manner.

c. Conclusions

The licensee's organization was maintained in accordance with regulatory requirements. The licensee's staff is sufficient to maintain quality and safety commensurate with the conduct of decommissioning activities.

O1.2 Potential Leak from Waste Test Tank

a. Inspection Scope (84750)

The inspection continued the regulatory review of the licensee's follow-up investigation into a possible leak from the liquid waste test tank (WTT) to groundwater wells.

b. Observations and Findings

On February 27, 2001, Condition Report (CR) 01-0087 was issued to investigate correlations between the use of the A WTT and the external containment mat sump (ECS) tritium activity. The licensee closed CR 01-0087 based on evidence that the A WTT was not contributing to the ECS activity. On April 5, 2001, the licensee issued CR 01-0123 to investigate an unexplained possible correlation between use of components in the liquid waste release systems and the ECS tritium activity.

The inspector reviewed CR 01-0123 and discussed the associated apparent cause investigation and the actions that have been implemented during their investigation. The licensee considered a possible system leak into the sub-surface environment that could lead to an uncontrolled, unmonitored release of radioactivity (tritium) to the environment. Because the potential uncontrolled, unmonitored release of radioactivity to the environment is in question until the licensee has provided a completed document with detailed data to support that tritium was monitored, this issue is considered an Unresolved Item (URI) **(URI 50-213/01-002-01)**.

c. Conclusions

The licensee initiated an investigation of the correlation of tritium concentrations between the external containment mat sump and groundwater monitoring wells. The investigation was necessary to address site characterization and liquid effluent pathways, and to provide detailed data to support that effluent releases of tritium to the environment were monitored. Until the licensee provides a completed document to support that effluent releases of tritium were effectively controlled and monitored, this matter is considered an Unresolved Item.

O1.3 Security Response to 9/11/01 Events

a. Inspection Scope (71801)

Following the terrorist events of September 11, 2001, the licensee initiated enhanced security measures in accordance with their Security Plan and regulatory guidance. The inspector reviewed enhanced security measures and evaluated compliance to requirements and commitments.

b. Observations and Findings

The licensee's enhanced security measures taken in response to the terrorist events of September 11, 2001 were observed by the inspector. The inspector discussed program and physical changes and toured the site with licensee personnel.

c. Conclusions

Timely and effective security enhancements were implemented following the terrorist events of September 11, 2001.

II. Decommissioning Status of Facilities and Equipment

O2 Decommissioning Status of Facilities and Equipment

O2.1 Equipment Dismantlement

a. Inspection Scope (71801)

The inspector evaluated the licensee's status of decommissioning work through discussions with cognizant licensee personnel and observations of major equipment dismantlement activities.

b. Observations and Findings

During the inspection period, the licensee dismantled and removed commodities from the Primary Auxiliary Building (PAB). The inspector observed that the dismantlement activities were completed in a safe and effective manner. The major focus of the licensee's efforts during this inspection period was the dismantlement of the filtration equipment in the reactor cavity used during the reactor segmentation project. This equipment remains highly contaminated and the licensee is proceeding cautiously in their attempt to clean up the reactor cavity in preparation for cavity drain-down next spring. The inspectors observed cutting of the filtration skid using underwater remote tools.

The inspector discussed the licensee's plan for removal of major equipment and dismantlement of the Turbine Building (TB). The TB crane has been removed and will be structurally modified to be single-failure proof in preparation for use for moving spent fuel. The licensee has established the TB as a separate RCA and will ship all dismantled equipment and commodities to GTS Duratek for surveys and processing. The inspector verified that persons entering the TB obtained proper authorization, signed the accountability logbook, and signed the correct radiation work permit. The inspector noted that the HP control point personnel obtained advance notification of persons approved for entry. The inspector verified that doors were secured to prevent entrance from the outside and also permitted exit from inside in an emergency. The inspector determined that RCA boundaries and associated postings were appropriate and HP effectively controlled access into and out of the TB.

During this inspection period, the pressurizer and the final two Steam Generator Lower Assemblies were shipped offsite to licensed radioactive waste disposal facilities. See Section IV. R1.4 for further details.

c. Conclusions

Dismantlement and removal of equipment and components continued to be conducted in a safe and efficient manner in accordance with work packages and release survey plans.

O2.2 Independent Spent Fuel Storage Installation

a. Inspection Scope (60853)

The inspectors reviewed the status of the ISFSI project and toured the licensee's proposed ISFSI site.

b. Observations and Findings

The inspectors reviewed the ISFSI project schedule with respect to fabrication and receipt of components for dry cask storage. The inspector noted that the fuel storage cask liners began arriving onsite in early June and are stored in the north parking lot. The transfer cask, yoke, and adapter fabrication had started in June, and canister assembly began in August. The licensee's Project Technical Oversight Manager stated that the licensee, Bechtel (as DOC), and its primary vendor (NAC International) were conducting quality assurance audits and surveillances at their vendor facilities in addition to the vendor's quality assurance activities.

With respect to the proposed ISFSI site, the inspectors observed the proposed haul route and the wooded area to be cleared for construction of the concrete pad and facility. Construction is on hold pending local government decisions regarding a zoning ordinance variance. The inspectors also noted that the engineering modifications for the spent fuel pool and for construction of the ISFSI were completed. Engineering analyses and modifications to single-failure proof the crane for canister fuel transfers were in progress.

c. Conclusions

While construction of the ISFSI facility remains on hold pending local government siting decisions, receipt and storage of fuel storage cask liners and fabrication of other major components has begun.

III. Spent Fuel Pool Safety

O3 Conduct of Operations

O3.1 Maintenance and Surveillance Program

a. Inspection Scope (60801)

The inspector reviewed the licensee's maintenance and surveillance program including planned and completed maintenance and surveillance activities of structures, systems and components that are important to the safe storage of spent fuel and proper operation of radiation monitoring and effluent control equipment. The inspector toured the spent fuel pool building and observed operator rounds. The inspector reviewed the preventative maintenance program and observed the performance of selected preventative maintenance activities. The inspector also assessed spent fuel pool cooling pump maintenance, including operational status and availability.

b. Observations and Findings

Structures, systems, and components were in good material condition and pumps were in good working order. Informational tags on equipment were appropriate and housekeeping was adequate. Appropriate security and fire protection measures were in place. On two separate occasions, the performance and knowledge base of two spent fuel pool building operators was observed and assessed. Performance of these operators demonstrated good command of the systems and building. Procedures were followed during the operators' routine rounds.

The inspector reviewed the preventative maintenance program and performance goals, including work prioritization, specific implementing procedures, and the work order tracking system procedure. Work is planned and coordinated with the appropriate departments one month in advance, and work orders and the specific procedure are then provided one week in advance. The inspector verified the licensee's tracking program by checking the status of selected systems and components. The inspector noted that two work orders for non-safety related systems or components were listed as backlog items. There were no safety related emergent issues. The licensee effectively managed the preventative maintenance program, including the backlog and emergent work, and met the licensee's performance goals expectations.

The inspector assessed "B" spent fuel pool cooling pump maintenance, including visual inspections and post maintenance testing; and the availability and operability status. One of the performance goals of the "B" spent fuel pool cooling pump is to control inventory (maintain adequate water over fuel assemblies). The results of the preventative maintenance and post maintenance tests were within the acceptable tolerance limits according to the licensee's vendor manual. The pump is able to perform its intended function.

The inspector also observed performance of selected ongoing preventative maintenance activities for the Fire Pump Diesel starting batteries and the EG-8 Diesel Generator starting batteries. The inspector also reviewed the associated procedures. Maintenance personnel were knowledgeable in this area and understood and followed the procedures. The results of the preventative maintenance activities were within the acceptance criteria as described in the procedures.

c. Conclusions

The licensee effectively maintained the structures, systems and components associated with safe storage of spent fuel. The licensee adequately assessed the availability and operability of the spent fuel cooling pump. Post-maintenance testing was performed to verify pump operability. The licensee's established performance goals were achieved and were sufficient to provide reasonable assurance that the systems and components were capable of fulfilling intended functions. Based on the above findings and observations, an effective maintenance and surveillance program relative to safe storage, maintenance and control of spent fuel, was implemented.

IV. Plant Support and Radiological Controls

R1 Radiological Protection Controls

R1.1 Radioactive Liquid and Gaseous Effluent Control Programs

a. Inspection Scope (84750)

The inspector reviewed the licensee's Radioactive Liquid and Gaseous Effluent Control Programs from January 2000 through May 2001. The inspection included examination of the Radiological Effluent Monitoring and Offsite Dose Calculation Manual (REMODOCM), Revision 14, related implementing procedures, selected radioactive effluent release permits from October 2000 to May 2001, and the Annual Radioactive Effluent Report for 2000.

b. Observations and Findings

The REMODOCM provided descriptions of the sampling and analysis programs that were used to quantify radioactive liquid and gaseous effluents and for calculating projected doses to the public. All necessary parameters, such as effluent radiation monitor set-point calculation methodologies and site-specific dilution factors, were listed. The REMODOCM requirements were fully incorporated into the licensee's effluent control implementing procedures. The inspector independently reviewed selected radioactive liquid and gaseous effluent release permits and associated procedures. The permits were completed according to the procedures. The licensee quantified radioactive liquid and gaseous effluents and calculated projected doses to the public as required by the REMODOCM.

The Annual Radioactive Effluent Report for 2000 included the total released radioactivity through liquid and airborne effluents; the projected maximum doses to the public; effluent radiation monitoring systems not returned to operable status within 30 days; and any REMODOCM changes. No reporting discrepancies were noted. Projected doses to the public were well below the REMODOCM limits and within regulatory requirements. The licensee made no significant REMODOCM changes.

c. Conclusions

The licensee maintained and implemented an effective radioactive liquid and gaseous effluent control program. Procedures were effectively implemented and the licensee ensured that projected doses to the public were within regulatory requirements.

R1.2 Effluent Radiation Monitoring System (RMS)

a. Inspection Scope (84750)

The inspector reviewed the calibration procedures and the calibration results for the RMS, the Waste and Recycle Test Tank Discharge Line Monitor (R-22) and the Spent Fuel Building Ventilation radiation monitor (R-1), to evaluate the effectiveness of the RMS calibration program.

b. Observations and Findings

The REMODCM requirements were incorporated into the licensee's calibration procedures. Calibrations were performed at the frequencies required in the REMODCM. Calibration results were within the licensee's acceptance criteria provided in the procedures, and were evaluated and tracked by the chemistry staff.

c. Conclusions

The licensee maintained an adequate program for RMS calibration.

R1.3 Occupational Exposure Controls

a. Inspection Scope (83750)

The inspector reviewed the licensee's planning for significant decommissioning activities, such as the Spent Fuel Pool (SFP) isolation dive, the sluicing of charcoal from the backwash storage tank in the reactor cavity, and the segmentation and removal of the filtration skid and Fuel Assembly Size (FAS) Canister Rack. These activities allowed the determination of the adequacy of the licensee's radiation protection program under challenging radiological conditions. The inspectors also observed selected work activities including pre-dive surveys of the SFP, locked high radiation controls for the PAB Pipe Chase Tunnel, and HP staff control of work activities in containment and during waste characterization sampling of tank sludge.

b. Observations and Findings

The inspector observed that the DOC, with licensee oversight support, routinely conducted readiness review meetings for radiologically significant work. These meetings provided an opportunity to discuss the radiation safety review and ALARA requirements, such as installation of a physical barrier in the SFP, and pre-determined criteria for selection of shielded containers for high dose rate radioactive waste shipments.

With respect to planning for the SFP isolation dive, the inspector observed the conduct of the pre-dive survey and confirmed the use of two calibrated AMP-100 high range GM probe instruments. Survey documentation was reviewed. The inspector also verified that the pre-dive survey instruments and tele-dosimetry for the divers were calibrated and source-checked the day of use.

The relocation of the HP control point to the former Training Building provides better access control to the RCA by physically limiting the path to enter and egress the area. Another change to the RCA control was the use of roving technicians instead of posted technicians to question all workers in the RCA about radiation work requirements. Routine and special briefings for all workers entering on specific Radiation Work Permits (RWP) were also observed. Survey information was current and the senior HP technicians provided in-depth briefings on radiological conditions in a well-controlled environment. The inspector observed the high radiation door guards challenging

personnel attempting to enter locked high radiation doors. Turnover briefings between guards required personnel accountability.

The inspector also noted that the briefings discussed personnel safety concerns, especially for matters related to heat stress when working in hot, humid summer weather. The inspector observed application of stay times, policies to permit water stations in specific radiation control areas, and re-evaluation of protective clothing requirements due to potential heat stress. No safety concerns were identified.

c. Conclusions

The licensee implemented an effective radiation protection program for radiologically significant work activities. The licensee's relocated HP control point provided adequate control to the RCA. Readiness reviews and pre-job briefings for all workers assigned to a specific task were routinely used to ensure procedure compliance and to provide current radiological and personal safety conditions.

R1.4 Radioactive Waste Management and Transportation

a. Inspection Scope (86750)

The inspector reviewed the licensee's Process Control Program (PCP) implementing procedures for de-watering filters that were shipped in High Integrity Containers (HICs). The inspection also included a review of the management of waste from de-mobilization of the reactor vessel segmentation project and the shipping records for the last two Steam Generator Lower Assemblies (SGLAs), control rod drive mechanisms (CRDMs), and pressurizer.

b. Observations and Findings

Since October 2000, four de-watered filters in HICs were shipped by the licensee to Barnwell for disposal. The licensee's Technical Specification (TS) 6.6.2 states, in part, that the PCP shall contain the current analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive waste will be accomplished to ensure compliance with 10 CFR Parts 20, 61 and 71. The licensee PCP dated August 8, 2000 stated, in part, that cartridge filter elements may be de-watered in a HIC in accordance with approved vendor procedures, and that the de-watering system shall be type-tested by the vendor for certification in meeting 10 CFR 61.56. The inspector discussed with the licensee and the licensee's waste contractor that the vendor procedure was draft, not approved by the licensee, and that the procedure noted that the de-watering process did not certify a process to meet the free standing liquid criteria of 10 CFR 61.56, as required by T S 6.6.2. The inspector stated that this is a violation of plant technical specifications. Because of the low safety significance and the timeliness and effectiveness of the licensee's corrective actions, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy (**NCV 50-213/01-002-02**).

The licensee conducted an investigation of this violation and other self-identified condition reports related to garnet waste-processing and lifting devices required for safe handling of solid radioactive waste packages. On May 17, 2001, the licensee's DOC suspended decommissioning work activities except for required surveillances. No other significant procedure compliance concerns with implementation of work control packages were identified. Additional quality control initiatives for de-watering were added to the work control procedure. Most work resumed within a

few days, except for de-watering activities. This work remained suspended until the licensee reviewed the implementation of related corrective actions. The licensee also conducted a telephone briefing for NRC regional management on May 24, 2001. The licensee summarized the immediate and long term corrective actions, evaluation of past shipments, and preliminary apparent cause to prevent reoccurrence. During follow-up inspections, the inspector examined selected procedure changes and was provided with periodic telephone updates regarding the status of these improvements. No other safety concerns were identified. The adequacy of these corrective actions were reviewed and this violation is considered closed.

During the inspection period, the remaining two SGLAs were shipped offsite by barge to Barnwell Radioactive Waste Disposal facility in South Carolina. The inspector reviewed survey data with cognizant HP personnel and verified that the shipping requirements of Exemption DOT-E 12183 and NRC regulatory requirements were met. The two SGLAs were safely and successfully buried at Barnwell with no adverse issues. The licensee also shipped CRDMs in a specifically designed re-usable package for disposal at Barnwell. NRC and DOT requirements were met for this shipment. Specific waste class marking issues relative to South Carolina Department of Health and Environmental Control requirements (DHEC) were addressed with DHEC, and procedure changes will be made prior to making shipments where a shipping container is not the disposal container.

During this inspection period, the licensee also shipped the pressurizer in accordance with DOT-E 12422. The inspector observed the loading and transfer of the pressurizer to a rail car in Portland, CT. The movement was completed safely and effectively. Coordination with local law enforcement resulted in minimal traffic tie ups. The inspector verified that the pressurizer was loaded into the rail car in accordance with applicable Department of Transportation (DOT) regulations and was safely shored and braced. The route of the shipment was reviewed and no concerns were identified. The pressurizer was received and buried at Envirocare in Utah on schedule and without incident.

c. Conclusions

The licensee completed its corrective actions, which included verification tests and procedural improvements, to its process control program to improve its solid radioactive waste program. Shipments of large components for radiological disposal continued to be adequately controlled and documented.

R1.5 ALARA Engineering and Design Reviews

a. Inspection Scope (83750)

The inspector reviewed the licensee's ALARA program regarding the engineering design of the reactor vessel segmentation cutting system.

b. Observations and Findings

The inspector reviewed the design of the reactor vessel segmentation cutting system and discussed with cognizant licensee representative the details of actions undertaken when unexpected high exposures were encountered. Radiation Safety Committee Meeting minutes were examined and directions from licensee management to control personnel exposures were reviewed. The inspector determined that a high level of management and QA attention was placed on the excessive exposures. Frequently daily discussions were held amongst and between the licensee and their DOC to ensure the appropriate measures were considered for reducing radiation doses. The inspector verified that the project was shut down on at least two occasions to install a better shielded bridge over the reactor cavity to reduce the radiation fields for workers, and to conduct small group meetings to reaffirm management's support of ALARA. Discussions with management indicated that the licensee was aware that the segmentation table was not controlling contamination as originally designed, but that replacing or redesigning it at the latter stages of the project would probably result in more collective dose than if work continued cautiously. The inspector reviewed doses to individuals and verified that no regulatory exposure limits were exceeded during the project. The inspector also verified that administrative procedures to ensure equitable distribution of dose among licensee employees were followed. The inspector independently concluded that correction of design flaws in the reactor segmentation cutting system would not have been ALARA based on information available during the project.

c. Conclusions

The licensee maintained and implemented an adequate ALARA program during the reactor segmentation project.

R7 Quality Assurance in RP&C Activities

R7.1 Quality Assurance Audits

a. Inspection Scope (84750)

The inspector reviewed the Quality Assurance Audit report CY-00-A11-01 "Chemistry, RECP, REMP, ODCM, and Environmental, dated January 11, 2001.

b. Observations and Findings

The inspector reviewed the licensee's Quality Assurance Audit Report, dated January 11, 2001 (Audit Number CY-00-A11-01). The licensee identified a number of findings and strengths. The scope and technical depth of the audit was sufficient to appropriately identify weaknesses in maintaining the radiation monitoring systems. Technical specialists evaluated the RMS and the radioactive effluent control program. Identified deficiencies were documented in the corrective action program as condition reports and were tracked until resolution. None of the identified deficiencies were significant with respect to impact on the public health and safety, or the environment.

c. Conclusions

The licensee's QA audit program regarding the radioactive effluent control program was effectively implemented.

R7.2 Self-Assessment and Corrective Action Program

a. Inspection Scope (40801)

The inspector reviewed the licensee's program for self-assessment and corrective actions. This area included review of the CY oversight focused reviews, several CRs, and observations of management review team meetings.

b. Observations and Findings

The inspector reviewed and discussed several CRs that were related to the environmental monitoring program (CRs 01-0288; 01-0289; and 01-0132). The inspector discussed with the department manager the corrective actions that were proposed to prevent recurrence and to ensure the disposition of the problems were adequate. The licensee determined a trend in the CRs with respect to human error and a lack of attention to detail, and proposed a comprehensive list of corrective actions.

c. Conclusions

The licensee has maintained an effective self-assessment and condition reporting program with an adequate low threshold for reporting problems. Focused management attention resulted in effective and timely corrective actions.

R8 Status of Previous Radiation Protection Items

a. Inspection Scope (71801)

The inspector reviewed documentation packages that had been prepared by the licensee to support closure of a Radiation Protection issue.

b. Observations and Findings

Closed (**NCV 2001-001-02**): Free-standing liquid in excess of 10 CFR 61.56 : On April 9, 2001, the licensee was notified by South Carolina DHEC personnel that a HIC containing filters from the reactor cavity and bags of dry active waste (DAW) was sampled and determined to be in excess of the criteria for free-standing liquid. The licensee was assessed a civil penalty of \$1000.00. This shipment was also considered a violation of 10 CFR 20, Appendix G, III, which states that any licensee who transfers radioactive waste to a land disposal facility shall prepare all wastes so that the waste meets the waste characteristics requirements in 10CFR61.56. The licensee conducted an investigation of this violation and took corrective actions to prevent reoccurrence. The inspector determined that the procedure changes and waste loading practices were implemented, and a thorough review of the licensee's de-watering process control program was conducted. In addition, the inspector noted that the corrective actions specified in the licensee's response letter dated May 21, 2001 to DHEC were also fully implemented.

c. Conclusions

The licensee has satisfactorily meet requirements and commitments and this item is closed.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management periodically during the inspection, and during a teleconference with the site manager and others on September 25, 2001. The licensee acknowledged the findings presented by the inspectors. The inspector reviewed with the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

X2 Other Meetings

On June 19, 2001, NRC staff attended the CDAC. The meeting was open for public participation, with an audience of approximately 30 people. During the meeting, NRC discussed the results of inspection 2000-001 and discussed inspection plans for Independent Spent Fuel Storage Installations. Followup questions focused on design characteristics of vertical concrete casks, and the ability to withstand catastrophic events.

On September 18, 2001, the CDAC held their monthly scheduled meeting at the Haddam-Killingworth High School in Haddam, CT. The meeting was open for public participation and was attended by approximately 200 people. Also in attendance was staff from the Connecticut Department of Environmental Protection, three selectmen from the Town of Haddam, and a staffer from US Representative Rob Simmon's office. Following this meeting, the selectmen conducted a Q&A session for the local citizens.

Members of the Region I Decommissioning and Laboratory Branch attended the meetings as well as representatives from NRR and the Spent Fuel Program Office. A staff member from the SFPO discussed details of the Dry Cask Storage System designed for the Haddam Neck facility. Questions from the committee and the public regarding terrorism and Spent Fuel Safety were answered by the NRC representatives. Questions regarding the letter from the EDO to the selectmen in response to their letter sent to Chairman Meserve on June 27, 2001 were answered and clarifications presented were appropriate.

PARTIAL LIST OF PERSONS CONTACTED

- J. Allen, Project Manager, Duratek
- * J. Bourassa, Nuclear Safety Manager
- M. Cavanaugh, Communications Manager
- E. Darois, Health Physicist, Bechtel
- J. DeLawrence, Technical Support Specialist
- D. Drulard, Site Construction Manager, Bechtel
- H. Farr, Radiological Engineer, Bechtel
- * N. Fetherston, Site Manager
- M. Firsick, Connecticut DEP
- K. Gavin, Project Field Engineer, Bechtel
- R. E. Gault, Rad Protection Specialist
- K. Heider, Vice President Operations and Decommissioning
- A. Heter, Integrated Site Closure, Bechtel
- * P. K. Jackson, Assistant Project Manager, Bechtel
- * R. McGrath, Radiological Engineering Supervisor
- R. Daly, Project Manager, Bechtel (Retired)
- W. McConnell, Assistant Waste Manager, Bechtel
- D. Montt, Chemistry Oversight
- * R. Mitchell, Unit Manager
- F. Perdomo, Regulatory Affairs
- M. Powers, Construction Oversight
- * R. Prunty, Licensing, Bechtel
- G. Seckenger, Offsite Material Recovery Program
- E. Sergent, QA auditor
- R. Sexton, Health Physics and Safety Oversight Manager
- E. Shyloski, Project Manager, Bechtel
- * J. Tarzia, Radiation Protection and Chemistry Manager, Bechtel
- W. Uhl, Operations Manager, Bechtel
- R. Vallem, Waste Management Supervisor, Bechtel
- * G. van Noordennen, Regulatory Affairs Manager
- * S. Webster, Licensing, Bechtel
- R. Willis, Operations
- A. Yates, Chemistry Supervisor

*Denotes attendance at the telephonic exit meeting held on September 25, 2001.

INSPECTION PROCEDURES USED

IP 36801: Organization
IP 40801: Self Assessment, Audits and Corrective Actions
IP 60801: Spent Fuel Pool Safety
IP 60853: Onsite Fabrication of Components and Construction of an ISFSI
IP 71801: Decommissioning Performance and Status Review
IP 83750: Occupation Radiation Exposure Controls
IP 84750: Radwaste Treatment/Effluent and Environmental Monitoring
IP 86750: Solid Radwaste Management and Transportation

ITEMS OPEN, CLOSED, AND DISCUSSED

Open

2001-002-01	URI	Potential Uncontrolled, Unmonitored Release to Groundwater Wells
2001-002-02	NCV	Inadequate Procedures to Comply with PCP

Closed

2001-001-02	NCV	Free-Standing Liquid in Excess of 10 CFR 61.56
2001-002-02	NCV	Inadequate Procedures to Comply with PCP

LIST OF ACRONYMS USED

ALARA	As Low As Reasonably Achievable
BAMT	Boric Acid Mix Tank
CDAC	Community Decommissioning Advisory Committee
CFH	Certified Fuel Handler
CFR	Code of Federal Regulations
CR	Condition Report
CRDM	Control Rod Drive Mechanisms
CY	Connecticut Yankee
CYAPCO	Connecticut Yankee Atomic Power Company
DAV	Dry Active Waste
DHEC	Department of Health and Environmental Control
DOC	Decommissioning Operations Contractor
DOT	Department of Transportation
ECS	External Containment Sump
EDGs	Emergency Diesel Generators
FAS Cans	Fuel Assembly Size Canisters
GET	General Employee Training
GTCC	Greater than Class C
HIC	High Integrity Containers
HP	Health Physics
ISFSI	Independent Spent Fuel Storage Installation
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
PAB	Primary Auxiliary Building
PAT	Plant Access Training
PCP	Process Control Program
PDR	Public Document Room
PORC	Plant Operation Review Committee
QA	Quality Assurance
RCA	Radiologically Controlled Area
REMDCM	Radiological Effluent Monitoring and Offsite Dose Calculation Manual
RMS	Radiation Monitoring System
RWPs	Radiation Work Permits
SFP	Spent Fuel Pool
SGLA	Steam Generator Lower Assemblies
TB	Turbine Building
TEDE	Total Effective Dose Equivalent
TS	Technical Specification
URI	Unresolved Item
WTT	Waste Test Tank