



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

July 9, 2008

Mr. Joseph E. Pollock  
Site Vice President  
Entergy Nuclear Operations, Inc.  
Indian Point Energy Center  
450 Broadway, GSB  
P.O. Box 249  
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT 1 - SAFSTOR  
INSPECTION REPORT 05000003/2008011

Dear Mr. Pollock:

On May 20, 2008, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Indian Point Nuclear Generating Unit 1. The enclosed inspection report documents the inspection results, which were discussed on April 25, 2008, with Mr. D. Mayer and other members of your staff. In addition, on June 20, 2008, Mr. C. English of your staff was contacted via telephone and a final summary exit was conducted.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspector reviewed selected procedures and records, observed activities, and interviewed personnel.

In accordance with 10 CFR Part 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS). ADAMS is accessible from the NRC Web Site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

Sincerely,

***/Original signed by/***

Raymond K. Lorson, Chief  
Decommissioning Branch  
Division of Nuclear Materials Safety

Docket No. 50-003  
License No. DPR-5

Enclosure: Inspection Report No. 05000003/2008011  
w/ Attachment: Supplemental Information

cc:

Senior Vice President, Entergy Nuclear Operations  
Vice President, Operations, Entergy Nuclear Operations  
Vice President, Oversight, Entergy Nuclear Operations  
Senior Manager, Nuclear Safety and Licensing, Entergy Nuclear Operations  
Senior Vice President and COO, Entergy Nuclear Operations  
Assistant General Counsel, Entergy Nuclear Operations  
Manager, Licensing, Entergy Nuclear Operations  
P. Tonko, President and CEO, New York State Energy Research and Development Authority  
C. Donaldson, Esquire, Assistant Attorney General, New York Department of Law  
A. Donahue, Mayor, Village of Buchanan  
J. G. Testa, Mayor, City of Peekskill  
R. Albanese, Four County Coordinator  
S. Lousteau, Treasury Department, Entergy Services, Inc.  
Chairman, Standing Committee on Energy, NYS Assembly  
Chairman, Standing Committee on Environmental Conservation, NYS Assembly  
Chairman, Committee on Corporations, Authorities, and Commissions  
M. Slobodien, Director, Emergency Planning  
P. Eddy, NYS Department of Public Service  
Assemblywoman Sandra Galef, NYS Assembly  
T. Seckerson, County Clerk, Westchester County Board of Legislators  
A. Spano, Westchester County Executive  
R. Bondi, Putnam County Executive  
C. Vanderhoef, Rockland County Executive  
E. A. Diana, Orange County Executive  
T. Judson, Central NY Citizens Awareness Network  
M. Elie, Citizens Awareness Network  
D. Lochbaum, Nuclear Safety Engineer, Union of Concerned Scientists  
Public Citizen's Critical Mass Energy Project  
M. Mariotte, Nuclear Information & Resources Service  
F. Zalcmann, Pace Law School, Energy Project  
L. Puglisi, Supervisor, Town of Cortlandt  
Congressman John Hall  
Congresswoman Nita Lowey  
Senator Hillary Rodham Clinton  
Senator Charles Schumer  
G. Shapiro, Senator Clinton's Staff  
J. Riccio, Greenpeace  
P. Musegaas, Riverkeeper, Inc.  
M. Kaplowitz, Chairman of County Environment & Health Committee  
A. Reynolds, Environmental Advocates  
D. Katz, Executive Director, Citizens Awareness Network  
K. Coplan, Pace Environmental Litigation Clinic  
M. Jacobs, IPSEC  
W. Little, Associate Attorney, NYSDEC  
M. J. Greene, Clearwater, Inc.  
R. Christman, Manager Training and Development

J. Spath, New York State Energy Research, SLO Designee

A. J. Kremer, New York Affordable Reliable Electricity Alliance (NY AREA)

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 Division of Nuclear Materials Safety

Docket No. 50-003  
 License No. DPR-5

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U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.: 50-003

License No.: DPR-5

Report No.: 05000003/2008011

Licensee: Entergy Nuclear Northeast

Facility: Indian Point Nuclear Generating Unit 1

Location: 450 Broadway, GSB  
Buchanan, NY, 10511-0308

Dates: April 23 – June 20, 2008

Inspectors: Laurie Kauffman, Health Physicist  
Division of Nuclear Materials Safety

Theodore Smith, Project Manager, Reactor Decommissioning Branch,  
Decommissioning and Uranium Recovery Licensing Directorate,  
Division of Waste Management and Environmental Protection,  
Office of Federal and State Materials and Environmental Management  
Programs

Approved by: Raymond Lorson, Chief  
Decommissioning Branch  
Division of Nuclear Materials Safety

## SUMMARY OF FINDINGS

IR 05000003/2008-011; 04/23/2008 – 06/17/2008; Indian Point Generating Unit 1;  
Other Activities – SAFSTOR Inspection.

The report covered a two-month period of inspection by one region-based inspector and one project manager from headquarters. The NRC's program for overseeing the safe operation of a shut-down nuclear power reactor is described in Manual Chapter (MC) 2561, "Decommissioning Power Reactor Inspection Program."

A. NRC-Identified and Self-Revealing Findings

None

B. Licensee-Identified Violations

None

## REPORT DETAILS

### Summary of Plant Status

Indian Point Nuclear Generating Unit 1 is a pressurized water reactor that has been shut down since October 31, 1974. Since that time, the reactor has remained in a shutdown, defueled condition, and Unit 1 has continued to serve as a support facility for the operation of Unit 2. Units 1 and 2 share a number of systems and facilities and also a common operating organization. Unit 1 contains radioactive waste processing facilities that provide radioactive waste processing for both Unit 1 and Unit 2.

#### **4. OTHER ACTIVITIES**

##### 4OA5 Other Activities

##### .1 Spent Fuel Pool Safety

##### a. Inspection Scope (60801 and 37801)

The inspector performed a review of the condition and operational status of structures, systems and components (SSC) important to the safe storage of spent fuel. The inspector reviewed the Unit 1 (U1) Technical Specifications (TS) and compared these requirements with associated procedures to ascertain that procedures were consistent with the TS. The inspector performed walk-downs of the nuclear service building, the chemical systems building, the fuel handling building, and the annulus area of the containment structure. The inspection also included a review of design changes and modifications, and 10 CFR 50.59 safety reviews. The inspector reviewed selected water chemistry data for the U1 spent fuel storage pool for January through April, 2008. The inspector also reviewed the results of the spent fuel storage pool inventory for 2007 and 2008 as described in Procedure EN-NF-200, Rev. 2, *Special Nuclear Material Control*.

##### b. Findings

No findings of significance were identified.

The inspector toured the facility and verified that systems and components important to the safe storage of spent fuel were operable and adequately maintained. Personnel were knowledgeable of the status of systems and components important to maintaining the safe status of U1. Material condition of plant equipment and general building areas was adequate.

The review of design changes and modifications indicated that the system modifications were completed. Entergy used corporate fleet-wide processes and procedures for all temporary modifications, and for all screening to determine if 10 CFR 50.59 safety reviews were required. Changes to the U1 TS were not required as a result of the screening process.

The inspector noted that Entergy was meeting the TS sampling and analysis requirements with respect to the water chemistry parameters. Additionally, Entergy was meeting the TS requirements for spent fuel pool water level monitoring and radioactivity analysis.

Personnel responsible for monitoring these systems were knowledgeable and understood their roles in maintaining safe storage of spent fuel. The systems and operational parameters were maintained within established acceptance criteria.

The inspector reviewed the results of the spent fuel storage pool inventory conducted in August 2007. The inspector noted that each fuel assembly was accounted for, and that the inventory was accurate.

Although Units 1 and 2 share a common operating organization, a separate U1 project organization was established to direct the activities of major projects related to U1. One major ongoing project is the removal of the spent fuel from the spent fuel storage pool to dry cask storage by the end of calendar year 2008. Another U1 project includes identifying and marking boundary interfaces between connected U1 and U2 electrical and mechanical systems. Entergy stated that this project would be completed by June 2008.

.2 Audit Reports and Corrective Action Program (CAP)

a. Inspection Scope (40801)

The inspector reviewed three audit reports related to the U1 programs, and Entergy's program for identifying, resolving, and preventing issues that degrade safety or the quality of decommissioning activities. The inspector reviewed selected 2007 and 2008 condition reports (CRs). The CRs were reviewed to evaluate the implementation of associated corrective actions and Entergy's effectiveness in identifying issues that could impact the safe storage of spent fuel. The inspector discussed the tracking, current status, and closure of the selected CRs with cognizant personnel.

b. Findings

No findings of significance were identified.

The inspector noted that the selected audit reports addressed U1 activities where appropriate. The audits were thorough and sufficiently detailed to identify programmatic weaknesses or areas of declining performance.

The inspector noted that the priority for addressing CRs and implementing corrective actions was adequate and based upon safety significance. The threshold for identifying issues entered into the CAP was appropriate. Responsible personnel were knowledgeable of the status of corrective actions and established measures to monitor completion of corrective actions. No adverse trends or safety concerns were identified.



### .3 Maintenance and Surveillance

#### a. Inspection Scope (62801)

The inspector reviewed Entergy's preventive maintenance (PM) program for SSC important for maintaining the safe storage of spent fuel. The inspector reviewed selected work orders (WOs) for the maintenance of the sphere foundation sump pump, continuous pool purification mixed bed ion exchange vessel (24/7 skid), containment annulus exhaust fan, and the fuel handling bridge crane. The inspector reviewed selected WOs for the fire extinguisher inspection and fire main booster pump tests. The inspector reviewed tracking and trending reports to determine Entergy's ability to effectively utilize the PM program and operator rounds data. The inspector toured plant areas and discussed aspects of the PM program with individuals cognizant of the performance of the above systems and components.

#### b. Findings

No findings of significance were identified.

The inspector noted that, since the previous inspection, Entergy had a dedicated support organization responsible for maintaining U1 SSCs important to the safe storage of spent fuel. The inspector verified that the maintenance for selected systems and components had been conducted in accordance with established procedures. The inspector noted that systems and components were operable and available for service. The inspector also noted that the information obtained during plant equipment operator rounds was utilized in evaluating the adequacy of established PM frequencies and the overall effectiveness of the PM program.

### .4 Occupational Radiation Safety

#### a. Inspection Scope (83750)

The inspector reviewed implementation of the occupational exposure control program associated with U1 activities. The inspection consisted of interviews with responsible individuals, review of radiological survey plans and radiological survey maps of radiologically controlled areas (RCA), and field observations of radiological postings. The inspector observed a potentially high dose job that was related to the removal of a fuel pool gate to prepare to move fuel to the cask load pool. The inspector reviewed the pre-job brief, WO, and procedure related to the job. The inspector also reviewed the "as low as reasonably achievable" (ALARA) post-job evaluation.

#### b. Findings

No findings of significance were identified.

The inspector noted that the U1 RCA was appropriately posted for dose rates and radioactive material. Radiological postings were readily visible, well-maintained, and accurately reflected radiological conditions. The radiological survey maps and related information maintained at the U1 access point were current.

The inspector noted that the licensee provided adequate controls to limit the exposure of workers to external sources of radiation, posting and labeling of radioactive materials and radiation areas met regulatory requirements, and the radiological controls and dose estimates associated with U1 tasks were effective in achieving dose goals.

The inspector also noted that the potentially high dose job related to the removal of the spent fuel pool gate to prepare to move fuel to the cask load pool was completed according to the pre-job brief and the associated WO and procedure. The pre-job brief was thorough, radiation controls and postings were appropriate, and air samplers were in place and operating. The radiation workers were knowledgeable of the tasks and demonstrated a questioning attitude during the job. The inspector noted that the associated radiation work permit was commensurate with the radiological significance of the task and included the appropriate exposure control measures for the safe implementation of the activity. From a review of the post-job ALARA evaluation, the inspector noted that the actual doses were below the dose goal.

#### 4OA6 Meetings, including Exit

##### Exit Meeting Summary

On April 25, 2008, the inspector presented the preliminary inspection results to Mr. D. Mayer, Director Special Projects and other members of the Entergy staff. The inspector confirmed that proprietary information was not provided or examined during the inspection. In addition, on June 20, 2008, Entergy was contacted via telephone and a final summary exit was conducted.

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee Personnel

G. Dahl, Licensing Engineer  
C. English, Unit 1 Project Engineer  
D. Mayer, Director, Special Projects  
W. Henries, Senior Engineer Consultant, Unit 1  
J. McCann, Licensing Consultant, Unit 1

### LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened and Closed

None

### LIST OF DOCUMENTS REVIEWED

Indian Point Nuclear Generating Unit No. 1, License Amendment No. 52 and Technical Specifications (TS)

#### Procedures

2-SOP-29.16, Unit 1 Spent Fuel Storage Operation, Revision 12  
O-PT- M004, Fire Extinguisher Inspection, Revision 2

#### Temporary Modifications

ER IP2-06-2-200: Unit 1 FHB 75T Crane Motors and Drives Upgrade  
EC 5000034207/TM 07-2-021: "Telltale" tap on U1 transfer canal inside vapor container  
EC 5000034209/TM 07-2-023: Coating on walls and floor of cask load pool and disassembly pool to reduce/minimize pool leakage

#### Audit Reports

QA-03-2007-IP-1, IPEC Corrective Action Program  
QA-14-2007-IP-1, IPEC Radiation Protection Program  
QA-06-2007-IP-1, IPEC Environmental and Effluent Programs

#### Condition Reports

CR-IP2-2007-00674; CR-IP2-2007-04241; CR-IP2-2007-05092; CR-IP2-2008-00184; CR-IP2-2008-00677; CR-IP2-2008-00981; CR-IP2-2008-01125; CR-IP2-2008-01189

Work Orders

WO 51223385 01, Replace 12 Sphere Foundation Drain Sump Pump  
WO 00123484 03, Remove Gate 3 Between West Fuel Pool and Disassembly Pool  
WO 51647979 01, Station Fire Extinguisher Inspection

Radiation Protection Documents

Radiation Surveys, Compensatory Survey after loss of power, January 31 – February 15, 2008  
2007 and 2008 year-to-date exposure reports  
2007 ALARA Evaluation for the U1 MSIV removal project asset recovery activities

**LIST OF ACRONYMS**

|       |   |
|-------|---|
| ADAMS | Agencywide Documents Access and Management System |
| CAP   | corrective action program                         |
| CFR   | Code of Federal Regulations                       |
| CR    | condition report                                  |
| MC    | inspection manual chapter                         |
| NRC   | Nuclear Regulatory Commission                     |
| PARS  | Publicly Available Records System                 |
| PM    | preventive maintenance                            |
| RCA   | radiologically controlled area                    |
| SFP   | spent fuel pool                                   |
| SSC   | structure, systems and components                 |
| TS    | technical specification                           |
| U1    | Unit 1  |
| WO    | work order  |