November 15, 2000

Mr. Michael T. Coyle
Vice President
Clinton Power Station
AmerGen Energy Company, LLC
Mail Code V-275
P. O. Box 678
Clinton, IL 61727

SUBJECT: CLINTON - NRC INSPECTION REPORT 50-461/00-18(DRS)

Dear Mr. Coyle:

On October 27, 2000, the NRC completed a routine inspection at your Clinton Power Station, Unit 1. The results were discussed on October 27, 2000, with you and other members of your staff. The enclosed report presents the results of that inspection.

The inspection was an examination of activities conducted under your license as they relate to radiation safety and to compliance with the Commission's rules and regulations and with the conditions of your license. Within these areas the inspection consisted of a selective examination of procedures and representative records, observations of activities, and interviews with personnel. Specifically, this inspection focused on occupational radiation safety.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. *ADAMS is accessible from* the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA by John House Acting For/

Gary L. Shear, Chief
Plant Support Branch
Division of Reactor Safety

Docket No. 50-461
License No. NPF-62

Enclosure: Inspection Report 50-461/00-18(DRS)

See Attached Distribution

cc w/encl: P. Hinnenkamp, Plant Manager
M. Reandeau, Director - Licensing
G. Rainey, Chief Nuclear Officer
E. Wrigley, Manager-Quality Assurance
M. Aguilar, Assistant Attorney General
G. Stramback, Regulatory Licensing
Services Project Manager
General Electric Company
Chairman, DeWitt County Board
State Liaison Officer
Chairman, Illinois Commerce Commission

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DATE	11/15/00		11/15/00		11/15/00			

OFFICIAL RECORD COPY

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G. Stramback, Regulatory Licensing
Services Project Manager
General Electric Company
Chairman, DeWitt County Board
State Liaison Officer
Chairman, Illinois Commerce Commission

ADAMS Distribution:
DFT
JBH1 (Project Mgr.)
J. Caldwell
G. Grant
B. Clayton
DRPIII
DRSIII
PLB1
JRK1
BAH3

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-461
License No:	NPF-62
Report No:	50-461/00-18(DRS)
Licensee:	AmerGen Energy Company, LLC
Facility:	Clinton Power Station
Location:	Route 54 West Clinton, IL 61727
Dates:	October 23-27, 2000
Inspector:	Steven K. Orth, Senior Radiation Specialist
Approved by:	Gary L. Shear, Chief Plant Support Branch Division of Reactor Safety

NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margin.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margin and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margin but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

SUMMARY OF FINDINGS

IR 05000461-00-18(DRS), on 10/23-10/27/2000, AmerGen Energy Company, LLC, Clinton Power Station, Unit 1, Radiation safety specialist report.

The inspection was conducted by a senior radiation specialist. The significance of most/all findings is indicated by their color (Green, White, Yellow, red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "no color" or by the severity level of the applicable violation.

A. Inspector Identified Findings

No findings of significance were identified.

B. Licensee Identified Findings

A violation of very low significance (Green) which was identified by the licensee has been reviewed by the inspector. Corrective actions taken or planned by the licensee appeared reasonable. This violation is listed in Section 4OA7 of this report.

Report Details

Summary of Plant Status

During this inspection, the plant was shutdown and in a scheduled refueling outage.

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety (OS)

2OS1 Access Control to Radiologically Significant Areas

.1 Plant Walkdowns and Radiological Boundary Verifications

a. Inspection Scope

The inspector performed walkdowns of the radiologically controlled area (RCA) to verify the adequacy of radiological boundaries and postings. Specifically, the inspector performed confirmatory radiation measurements in the Turbine and Auxiliary Buildings and in the Reactor Building Drywell to verify that radiologically significant work areas (high radiation areas (HRAs), radiation areas, and airborne radioactivity areas) were properly posted and controlled in accordance with 10 CFR Part 20 and the licensee's procedures.

b. Findings

No findings of significance were identified.

.2 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed condition reports (CRs) completed during the refueling outage which identified incidents occurring in HRAs, radiation worker practice problems, and radiation protection technician performance issues. In particular, the inspector discussed with the licensee an adverse trend in radiation worker practices that was documented in a number of CRs. The inspector reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and corrective actions which will achieve lasting results.

b. Findings

On October 20, 2000, the licensee identified that a contract radiation protection technician misused contaminated material to alarm a portal contamination monitor (PCM). At that time, a work crew was using the PCMs to perform personal contamination surveys at one of the RCA exit points. The contract radiation protection technician stated to the licensee that another member of the work crew, who was being decontaminated, asked the technician to alarm a PCM while one of his crew was monitoring through the PCM, as a prank. The contract radiation technician stated to the

licensee that she placed a piece of contaminated tape (having a particle of about 20,000 disintegrations per minute) near one of the PCM's detectors, as the individual was processing through the PCM. The technician indicated that the particle was not placed directly on the individual, only in front of the detector. As a result of the technician's actions, the PCM alarmed. Following the alarm, the individual processed through another PCM, without receiving an alarm, and exited the RCA, in accordance with the licensee's procedures.

After learning of the incident, radiation protection management immediately suspended the technician's access to the RCA and documented the occurrence in CR No. 2-00-10-151. After discussions with radiation protection management, the technician chose to terminate her employment with the licensee.

The inspector discussed the incident with members of the radiation protection staff. Based on these discussions and the initial results of the licensee's investigation, the inspector concluded that the technician's use of the contaminated tape (i.e., byproduct radioactive material) to alarm the PCM appeared to be in violation of the licensee's license. The incident will be reviewed by the NRC for potential enforcement actions (Unresolved Item (URI) No. 50-461/00-18-01).

During its investigation, the licensee also determined that two other radiation protection technicians were indirectly involved in the event. In one case, a technician had obtained the particle on the tape and had not properly controlled it, with respect to management's expectations. In the other case, the individual apparently had knowledge of the technician's intent to alarm the PCM with the contaminated material but did not discourage the technician or prevent the incident. The licensee counseled and disciplined both technicians.

2OS2 As-Low-As-Is-Reasonably-Achievable (ALARA) Planning and Controls

.1 Radiation Dose Goals and Trending

a. Inspection Scope

The inspector reviewed the licensee's outage dose goals. In particular, the inspector compared the current dose estimates to the licensee's historical performance and reviewed the licensee's assumptions used to estimate current job doses to verify that the licensee had a technical basis for its dose estimates. The inspector also reviewed the licensee's dose trending/tracking to ensure that the licensee was taking action to identify work activities that were not progressing as expected. In addition, the inspector reviewed personnel exposures within work groups to identify the reasons for any significant exposure variations.

b. Findings

The licensee established a goal of 186 person-rem for the Fall 2000 refueling outage. As of October 27, 2000, the licensee recorded an outage exposure of about 107.7 person-rem, as compared to its predicted exposure of about 116.5 person-rem (for that stage of the outage). At the time of this inspection, the inspector did not identify any

work activities where the actual exposure was greater than the estimate by more than 50 percent and the actual job exposure exceeded five person-rem.

No findings of significance were identified.

.2 Job Site Inspections and ALARA Controls

a. Inspection Scope

The inspector observed work activities in the RCA that were performed in radiation areas or HRAs to evaluate the use of ALARA controls. Specifically, the inspector verified the adequacy of radiation work permits (RWPs), ALARA reviews, surveys, pre-job radiological briefings (as applicable), and radiation protection technician performance for the following work activities:

- Local Power Range Monitor Removal;
- Reactor Recirculation Pump Seal Replacement;
- Drywell Scaffolding; and
- Emergency Core Cooling System Maintenance Activities.

The inspector also reviewed the licensee's radiological planning for the disassembly and reassembly of the reactor head and upper internals.

b. Findings

No findings of significance were identified.

.3 Problem Identification and Resolution

a. Inspection Scope

The inspector reviewed self-assessments, audits, and condition reports completed during the previous 12-months which focused on ALARA planning and controls. The inspector reviewed these documents to assess the licensee's ability to identify repetitive problems, contributing causes, the extent of conditions, and corrective actions which will achieve lasting results.

b. Findings

No findings of significance were identified.

2OS4 Radiation Worker Performance

a. Inspection Scope

The inspector observed radiation workers performing the activities described in Section 2OS2.2 and evaluated their awareness of radiological conditions and their implementation of applicable radiological controls.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES (OA)

4OA6 Management Meetings

The inspector presented the inspection results to Mr. Coyle and other members of licensee management at the conclusion of the inspection on October 27, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

4OA7 Licensee Identified Violations. The following finding of very low significance (Green) was identified by the licensee and is a violation of NRC requirements which meets the criteria of Section VI of the NRC Enforcement Policy, NUREG-1600 for being dispositioned as a Non-Cited Violation (NCV).

NCV Tracking Number	Requirement Licensee Failed to Meet
(1) NCV 50-461/00-18-02	Technical Specification 5.7.1, requires in part, that entrance to an HRA be controlled by requiring an RWP and that any individual or group of individuals permitted to enter a high radiation area be provided with, or accompanied by, one or more of the following: a. A radiation monitoring device that continuously indicates the radiation dose rate in the area. b. A radiation monitoring device that continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after dose rates in the area have been determined and personnel have been made knowledgeable of them. c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device. This individual shall be responsible for providing positive radiation protection control over the activities within the

area and shall perform periodic radiation surveillance a the frequency specified by radiation protection supervision. On October 25, 2000, three individuals entered the B residual heat removal heat exchanger room (a posted HRA); however, the individuals were not working under an RWP that allowed entry into the HRA and did not satisfy either of the three above conditions specified in Technical Specification 5.7.1 for entry. The licensee documented this incident in CR No. 2-00-10-197.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

K. Baker, Director, Design Engineering
S. Clary, Director, Plant Engineering
M. Coyle, Vice President
R. Davis, Supervisor, Radiological Operations
T. Elwood, Licensing
R. Frantz, Licensing
P. Hinnenkamp, Plant Manager
A. Plater, Radiation Protection Manager
D. Reoch, Supervisor, ALARA
P. Sawyer, Assistant Radiation Protection Manager

NRC

K. Green-Bates, Reactor Engineer
P. Louden, Senior Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-461/00-18-01	URI	Radiation protection technician used contaminated material to alarm a PCM while an individual was performing a contamination survey in the monitor (Section 2OS1.2).
50-461/00-18-02	NCV	Three individuals entered a HRA in violation of Technical Specification 5.7.1 (Section 4OA7).

Closed

50-461/00-18-02	NCV	Three individuals entered a HRA in violation of Technical Specification 5.7.1 (Section 4OA7).

Discussed

None

LIST OF ACRONYMS USED

ALARA	As-Low-As-Is-Reasonably-Achievable
CR	Condition Report
DRS	Division of Reactor Safety
HRA	High Radiation Area
NCV	Non-Cited Violation
OS	Occupational Radiation Safety
PCM	Portal Contamination Monitor
RCA	Radiologically Controlled Area
RWP	Radiation Work Permit
SDP	Significance Determination Process
URI	Unresolved Item

LIST OF DOCUMENTS REVIEWED

Audits and Assessments

Quality Assurance Assessment Report, “Radiological Work Control,” dated April 11, 2000
Quality Assurance Field Observations Nos. 2000-40-001, 2000-40-004, 2000-40-005, 2000-40-017, and 2000-40-021
“Radiation Protection Department ALARA Planning Self-Assessment Report Number: 2000-057,” dated June 8, 2000
“Radiation Protection Department, Self-Assessment Report, Self-Assessment Number 2000-028,” dated April 20, 2000
“Self-Assessment Report, Personnel Contamination Program, Assessment No. 2000-010,” dated February 28, 2000

Condition Reports Nos.:

2-00-10-072, 2-00-10-098, 2-00-10-099, 2-00-10-104, 2-00-10-115, 2-00-10-140, 2-00-10-142, 2-00-10-143, 2-00-10-146, 2-00-10-151, 2-00-10-156, 2-00-10-184, 2-00-10-197, and 2-00-10-198

Miscellaneous

Radiation Work Permit No. 20001074, “Rx [reactor] Dis/Re-assmebly Rx Cavity”
Radiation Work Permit No. 20001113, “Drywell -- SRM [startup range monitors]/IRM [intermediate range monitors]/LPRM [local power range monitors] Troubleshoot/Repair/Replace”
Radiation Work Permit No. 20001146, “Drywell -- RR [reactor recirculation] System Work Including Seal Replacements”
Radiation Work Permit No. 20001148, “Drywell -- Scaffold”

Procedures Nos.

CPS No. 1024.05 (Revision 9a), “ALARA Program Elements”
CPS No. 7001.10 (Revision 8b), “Radiation Work Permit -- RP Processing”
CPS No. 7500.01 (Revision 7a), “ALARA Job Reviews”