June 15, 2000

Mr. Oliver D. Kingsley
President, Nuclear Generation Group
Commonwealth Edison Company
ATTN: Regulatory Services
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, IL 60515

SUBJECT: BRAIDWOOD - NRC INSPECTION REPORT 50-456/2000008(DRS); 50-457/2000008(DRS)

Dear Mr. Kingsley:

On May 26, 2000, the NRC completed a routine inspection at your Braidwood Nuclear Power Station. The results were discussed on May 26, 2000, with Mr. Schwartz and 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 and public radiation safety including processing and shipping of radioactive materials, radiological work planning, radiological monitoring instrumentation, verification of your performance indicator for the occupational radiation safety cornerstone, and verification of the performance indicator data collecting and reporting process.

Based on the results of this inspection, no findings 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).

We will gladly discuss any questions you have concerning this inspection.

Sincerely,

/RA/

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

Docket Nos. 50-456; 50-457
License Nos. NPF-72; NPF-77

Enclosure: Inspection Report 50-456/2000008(DRS);
50-457/2000008(DRS)

cc w/encl: D. Helwig, Senior Vice President, Nuclear Services
C. Crane, Senior Vice President, Nuclear Operations
H. Stanley, Vice President, Nuclear Operations
R. Krich, Vice President, Regulatory Services
DCD - Licensing
T. Tulon, Site Vice President
K. Schwartz, Station Manager
T. Simpkin, Regulatory Assurance Supervisor
M. Aguilar, Assistant Attorney General
State Liaison Officer
Chairman, Illinois Commerce Commission

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-456; 50-457
License Nos:	NPF-72; NPF-77
Report No:	50-456/2000008(DRS); 50-457/2000008(DRS)
Licensee:	Commonwealth Edison Company
Facility:	Braidwood Nuclear Plant, Units 1 and 2
Location:	35100 South Route 53 Suite 84 Braceville, IL 60407-9617
Inspection Dates:	May 22 to 26, 2000
Inspectors:	John House, Senior Radiation Specialist David Nelson, 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

The report covers a one-week period of announced inspection by two regional radiation specialists. This inspection focused on occupational and public radiation safety including processing and shipping of radioactive materials, problem identification and resolution, radiological work planning, radiological monitoring instrumentation, verification of the performance indicator for the occupational radiation safety cornerstone, and verification of the performance indicator data collecting and reporting process.

The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609.

RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

- No findings were identified during this inspection.

Cornerstone: Public Radiation Safety

- No findings were identified during this inspection.

Report Details

2. RADIATION SAFETY

Cornerstone: Occupational Radiation Safety

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

.1 Radiological Work Planning

a. Inspection Scope

The inspectors reviewed the licensee's dose goals and dose assessment for the recently completed refueling outage A1R08. Members of the licensee's radiation protection staff were interviewed concerning work practices during the outage. Radiation worker exposure by department and by work projects was also reviewed.

b. Issues and Findings

No findings were identified during this inspection.

2OS3 Radiation Monitoring Instrumentation

.1 Radiation Protection Survey Instrument Use

a. Inspection Scope

The inspectors verified the calibration and source checks of selected whole body frisking monitors and small article monitors. The following procedures governing calibration and operation of radiation monitors were reviewed:

BwRP 5822-8, Operation and Calibration of the IPM-7/8/8D Whole Body Frisking Monitor.

BwRP 5822-11, Operation and Calibration of the Model SAM-9/11 Small Articles Monitor.

b. Issues and Findings

No findings were identified during this inspection.

Cornerstone: Public Radiation Safety

2PS2 Radioactive Material Processing and Transportation

.1 Walkdown of Radioactive Waste Systems

a. Inspection Scope

The inspectors reviewed the liquid and solid radioactive waste systems to assess their material condition and operability. The inspectors also compared the operations of the systems to the descriptions in the Updated Final Safety Analysis Report (UFSAR) and the process control program (PCP). The inspectors also performed walk-downs of the liquid and solid radwaste processing systems located in the Radwaste Building and the Auxiliary Building. During this inspection, the licensee was not conducting waste processing.

b. Issues and Findings

No findings were identified during this inspection.

.2 Waste Characterization and Classification

a. Inspection Scope

The inspectors reviewed the licensee's method and procedures for determining the classification of radioactive waste shipments, including the licensee's use of scaling factors to quantify difficult-to-measure radionuclides (e.g., pure alpha or beta emitting radionuclides). The inspectors also reviewed records of radioactive waste shipments to verify that the shipments were properly classified and characterized in accordance with the requirements contained in 10 CFR Part 61.

b. Issues and Findings

No findings were identified during this inspection.

.3 Shipping Preparation

a. Inspection Scope

There were no radioactive materials shipments made by the licensee during the inspection.

.4 Shipping Records

a. Inspection Scope

The inspectors reviewed selected documentation (four) of non-excepted package shipments completed in 2000 to verify compliance with NRC and Department of

Transportation (DOT) requirements (i.e., 10 CFR Parts 20 and 71 and 49 CFR Parts 172 and 173).

b. Issues and Findings

No findings were identified during this inspection.

.5 Identification and Resolution of Problems

a. Inspection Scope

The inspectors reviewed the licensee's self-assessments, audits, and problem identification forms concerning the radioactive material processing and transportation programs.

b. Issues and Findings

No findings were identified during this inspection.

4. OTHER ACTIVITIES (OA)

4OA1 Performance Indicator Verification

a. Inspection Scope

The inspectors verified the licensee's assessment of its performance indicator (PI) for the occupational radiation safety cornerstone. The review focused on problem identification forms (PIFs) and selected exposure data for the first five months of 2000.

b. Issues and Findings

No findings were identified during this inspection.

4OA5 Performance Indicator Data Collecting and Reporting Process Review (TI 2515/144)

a. Inspection Scope

The inspectors evaluated the licensee's performance indicator (PI) data collection and reporting process to determine whether the licensee was appropriately implementing the NRC/Industry guidance, as documented in Nuclear Energy Institute (NEI) 99-02, Revision 0, "Regulatory Assessment Performance Indicator Guide." The evaluation consisted of interviews with licensee staff members responsible for data acquisition, verification and reporting. In addition, the following procedures were reviewed:

RS-AA-122, Revision 1: Regulatory Assurance Performance Indicator Monthly Review Process.

RS-AA-122-115, Revision 1: Performance Indicator-Occupational Exposure Control Effectiveness.

RS-AA-122-116, Revision 0: Performance Indicator-RETS/ODCM Radiological Effluent Occurrence.

b. Issues and Findings

No findings were identified during this inspection.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Schwartz and other members of licensee management at the conclusion of the inspection on May 26, 2000. The licensee acknowledged the findings presented. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

M. Cassidy, Regulatory Assurance - NRC Coordinator
C. Dunn, Operations Manager
M. Finney, Lead Operational Health Physicist
D. Goldsmith, Radiation Protection Manager
R. Krbec, Systems Engineer
T. Meents, Radioactive Waste Supervisor
D. Morse, Shipping Specialist
R. Thacker, Radiation Protection Supervisor
B. Schramer, Chemistry Manager
K. Schwartz, Station Manager
T. Simpkin, Regulatory Assurance Manager
M. Spisak, Systems Engineer
P. Studdard, Radiation Protection
T. Tulon, Site Vice-President
G. Vickers, Health Physicist Specialist

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

None

Closed

None

Discussed

None

LIST OF BASELINE INSPECTION PROCEDURES PERFORMED

The following inspectable-area procedures were used to perform inspections during the report period. Documented findings are contained in the body of the report.

Inspection Procedure		Report
Number	Title	Section
71121-02	ALARA Planning and Controls	2OS2
71121-03	Radiation Monitoring Instrumentation	2OS3
71122-02	Radioactive Material Processing and Transportation	2PS2
TI 2515/144	Performance Indicator Data Collecting and Reporting Process Review	
71151	Performance Indicator Verification	4OA1

LIST OF ACRONYMS USED

Radiation Protection and Chemistry

BwRP	Braidwood Radiation Protection Procedure
CFR	Code of Federal Regulations
DOT	Department of Transportation
NEI	Nuclear Energy Institute
NRC	Nuclear Regulatory Commission
OA	Other Activities
ODCM	Off-site Dose Calculation Manual
PCP	Process Control Program
PIF	Problem Identification Form
REMP	Radiological Environmental Monitoring Program
RP	Radiation Protection
RPM	Radiation Protection Manager
TI	Temporary Instruction
UFSAR	Updated Final Safety Analysis Report

PARTIAL LIST OF DOCUMENTS REVIEWED

Assessments and Audits

NOA-20-00-PS04, “Process Control Program, Effluent & Environmental Monitoring;”
NOA-20-00-PS04, “Process Control Program, Effluent & Environmental Monitoring Assessment Plan.”

Miscellaneous

Braidwood UFSAR, Section 11.0, “Radioactive Waste Management;”
Comp. Diagrams of Liquid Radwaste Treatment Processing Units 1 & 2;
Radiation Protection Guideline #RAS-02, “10 CFR 61 Scaling Factors;
Radioactive Waste Shipment Log 2000;”
10 CFR 50.59 Safety Evaluation Validation Form for UFSAR Change 6-088;
10 CFR 61 Analysis for Primary Resin and Secondary Resin.

Problem Identification Forms

A2000-00440, A2000-00734, Q2000-00813, Q2000-01594, Q2000-01700, Q2000-02670, A2000-02331, A2000-02332, A2000-02279, A2000-01718, A2000-02092, A2000-01725, A2000-01611.

Procedures

RW-AA-10 (Revision 1), “Process Control Program for Radioactive Wastes.”
BwRP 5822-8, “Operation and Calibration of the IPM-7/8/8D Whole Body Frisking Monitor.”
BwRP 5822-11, “Operation and Calibration of the Model SAM-9/11 Small Articles Monitor.”
RS-AA-122, Revision 1: Regulatory Assurance Performance Indicator Monthly Review Process.
RS-AA-122-115, Revision 1: Performance Indicator-Occupational Exposure Control Effectiveness.
RS-AA-122-116, Revision 0: Performance Indicator-RETS/ODCM Radiological Effluent Occurrence.

Shipping Records

Shipments: RWS00-002 (Type B), RWS00-003 (Type B), RWS00-004 (LSA-II), RMS00-042 (Type A).