U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Reports No. 50-456/92003(DRSS); 50-457/92003(DRSS)

Docket Nos. 50-456; 50-457 Licenses No. NPF-72; NPF-77

Licensee: Commonwealth Edison Company
Opus West III
1400 Opus Place
Downers Grove, IL 60515

Facility Name: Braidwood Nuclear Power Station

Inspection At: Braidwood Site, Braidwood, Illinois

Inspection Conducted: January 7-10, 1992

Inspector: M. Schumacher for A. G. Januska 1-30-92
Date

Accompanied By: S. K. Orth

Approved By: M. C. Schumacher, Chief
Radiological Controls and
Chemistry Section
M. Schumacher 1-30-92
Date

Inspection Summary

Inspection on January 7-10, 1992 (Reports No. 50-456/92003(DRSS); 50-457/92003(DRSS))
Areas Inspected: Routine unannounced inspection of the licensee's confirmatory measurements program (IP 84750) including: audits, quality assurance, confirmatory measurements of in-plant radiochemical analyses, implementation of the radiological environmental monitoring program (REMP), post accident sampling, and close out of open items and a violation.
Results: The REMP program appears to be implemented properly. The licensee has implemented a comprehensive quality control program for the Post Accident Sampling System (PASS) to insure reliable operability.

## DETAILS

1. Persons Contacted

*K. Aleshire, Emergency Preparedness Coordinator
*K. Bartes, Onsite Nuclear Safety Administrator
S. Butler, Chemistry Technician
*E. Carroll, Regulatory Assurance
*H. Engstrom, Chemistry E. A.
*G. Groth, Production Superintendent
*A. Haeger, Regulatory Assurance Supervisor
*D. Hanrahan, Chemist
C. Hurschik, Chemistry Technician
T. Jacobson, Nuclear Quality Programs Training Coordinator
R. James, Chemistry E. A.
*F. Lesage, Nuclear Quality Programs
*J. Petro, Chemistry Supervisor
*A. Pusztai, Nuclear Quality Programs
*E. Roche, Health Physics Supervisor

*R. Kopriva, Resident Inspector

* Present at the exit meeting on January 10, 1992

The inspector also contacted other licensee employees.

2. Licensee Action on Previous Inspection Findings

a. (Closed) Open Item (456/90005-02; 457/90005-02): Licensee to develop and implement an action plan for calibration and a quality control (QC) program for the PASS inline monitors. The licensee has developed a QC program and records examined indicate that the program has been satisfactorily implemented.

b. (Closed) Open Item (456/90022-01; 457/90024-01): Licensee to analyze a spiked radioactive sample supplied by RESL containing Sr-89, Sr-90 and gross beta. Due to errors by both the licensee and his vendor laboratory, the samples were allowed to decay too long for analytical results to be compared. (See Section 2.C)

c. (Closed) Open Item (456/91011-01; 457/91009-01): Portion of liquid waste sample to be analyzed for gross alpha, gross beta, H-3, Sr-89, Sr-90 and Fe-55 by licensee for comparison with analysis by NRC reference lab on split of the same sample. This sample was sent to the licensee's vendor laboratory with the sample discussed in Section 2.b above and results were not available for the same reason. Although these results were not available the licensee is engaged in

a cross reference program with an independent vendor where comparable analyses have resulted in good agreements. A sample split during the current inspection will be submitted for analyses and followed under Open Item 456/92003-02; 457/92003-02 discussed in Section 4.a.

d. (Closed) Violation (456/90022-02; 457/90024-02): Violation of T/S 3/4.12.1.8, failure to report high level of H-3 in REMP sample from river. The inspectors saw evidence that the licensee has satisfactorily completed the corrective actions stated in a response letter to A. B. Davis dated January 17, 1991. In addition, the letter stated that a further study of the sample anomalies will be performed and available for review. Except for a Kankakee River low flow study the special sampling study is complete and was reviewed. The low flow study is planned for this summer and will be followed under Open Item 456/92003-01; 457/92003-01.

3. Management Control, Organization, and Training (IP 84750)

The Chemistry Section has changed slightly since last described in Inspection Reports No. 50-456/90022; 50-457/90024 with an increase of one Chemist and two Chemistry Technicians (CTs). Seventeen of twenty CTs currently in the Chemistry Section are qualified under ANSI N18.1-1971. Two of the 17 are currently on temporary assignment to the Waste Products Coordinator in the Hazardous Materials Group. Three "B" grade technicians are scheduled to become "A" grade and qualified under ANSI N18.1-1971 by midyear.

The inspectors discussed the training program for "A" and "B" CTs with a representative of the training staff. The training, as outlined in "Braidwood Station Chemistry Technician and Chemistry Technician B Administrative and Management Information", Rev. 4, 1990 and "Braidwood Nuclear Station Chemistry Technician/Chemistry Technician B Site Specific Training Standard/Certification Guide", Rev. 1, 1990, requires both classroom and on the job training for station certification. The certification for "A" CT requires additional classroom and on the job training after "B" CT certification is achieved. All training requirements and completion are documented in a training journal. Only after completion of the training journal and review/approval of the Chemistry Superintendent will the CT become certified. After certification, the CT will be able to work independently at all of the tasks in the journal.

Continuing training is given annually for the "A" CTs. This training covers selected topics and instruction on any new instruments added to the laboratory. Training on the Post Accident Sampling System (PASS) is also required on an annual basis. This training is divided into two sessions given at six month intervals. The completion of this training is documented in a computer data base. The inspector verified that all

"A" CTs had completed PASS training for 1991. An evaluation exam is also given annually to "A" CTs at the end of each of three one week training sessions. Those who do not complete this successfully are given oral instruction and retested.

No violations or deviations were identified.

4. Radiological Confirmatory Measurements (IP 84750)

a. Sample Split

Four samples (air particulate, charcoal adsorber, liquid waste, and gas) were collected during this inspection. All will be analyzed by the licensee for gamma activity and in addition the liquid waste sample will be analyzed for gross beta, H-3, Sr-89, Sr-90 and Fe-55. The licensee will report the results to Region III for comparison with an analyses performed by the NRC Reference Laboratory. (Open Item 456/92003-02; 457/92003-02)

b. Reviews and Audits

The inspectors reviewed Nuclear Quality Programs Audit Report Nos. 20-91-14 entitled Environmental Protection, 20-91-12 entitled Chemistry, 20-91-07 entitled License Compliance, and selected Field Monitoring Reports (FMRs). The audits were very detailed and looked at chemistry in depth. Findings which resulted were described in detail as were the corrective actions which appeared to be acceptable. The FMRs, which are task specific, were concise yet very comprehensive and provided a quick analysis of the reviewed task.

The inspectors discussed the qualifications of auditors, specifically for chemistry, and noted that records indicated that the majority of the auditors are qualified.

c. Quality Control

The inspectors reviewed the quality control program for the licensee's 6 high purity Germanium (HPGe), 2 liquid scintillation, and 2 proportional counters. Daily performance checks are done on the HPGe detectors using an independent Co-60/Ba-133 source to determine centroids, sensitivity, and activity. If any of these values deviate from the mean by more than 2 sigma, a flag appears. The instrument automatically reanalyzes the source. If the instrument fails again on the same isotope, it will automatically be taken out of service and require management attention or direction. The proportional and liquid scintillation counters are performance checked daily using independent sources and background counts. The technician operating the instrument must transfer the data into a

data base which analyzes the data using the same requirements as above. The technician must then manually act on the data base's responses. Trends are maintained of the most recent 30 day period and reviewed by management for bias.

Inspectors reviewed the trend charts for the above instruments. Overall, the data was statistically distributed over the 2 sigma bands. When a bias was apparent, it was noted that the instrument was recalibrated per procedures. All control charts either show or correct for the decay of the source.

Calibrations are performed annually or when biases are detected from trend charts. The new calibrations are implemented provided they do not deviate from the former calibration by more than 10 percent. Further calibrations must be done if this criteria is not met.

Instrument maintenance logs are maintained for each instrument. This log is very detailed and documents all service performed on the instrument and the dates out of service. The logs also indicate when the instruments are recalibrated and the reason for recalibration. Overall, these logs were very legible and well kept.

The licensee participates in a quarterly radiochemistry crosscheck program with a vendor and an annual program with the National Institute of Standards and Technology (NIST). Selected results examined were very good.

The inspector noted that the count room and the chemistry labs are of ample size and functional. The housekeeping in the radiochemistry laboratory was found to be less than desirable during one tour at the end of the day shift. Management was advised of the condition and acknowledged the inspectors' finding. The technicians who collected and prepared the liquid and the gas sample used good sample collection and laboratory techniques.

All of the elements of the licensee's QC program discussed above constitue a good overall QC program.

No violations or deviations were identified.

5. Radiological Environmental Monitoring Program (IP 34750)

The inspector examined the licensee's Radiological Environmental Monitoring Program for compliance with Technical Specifications and for proper implementation. The program appears to comply with the Technical Specifications and is being implemented properly. A review of the 1990 Annual Environmental Monitoring Report and the first three quarters of 1991 monthly reports indicate that some positive sample results, primarily tritium, were attributable to the operation of the plant.

The licensee implemented a sampling program in 1991 because of tritium measured in an upstream Kankakee River sample. Twenty-seven residences' wells were sampled with two positive results; these were below levels that require reporting. The inspectors noted that four residence's wells including the two positives and two adjacent wells will be sampled during 1992 and reported in the annual report. The method of data evaluation and reporting of anomalous results to the licensee appears to be good.

The collector's weekly sample collection data sheets and the quarterly calibration sheets were examined and found to be complete. In addition to the inspection the collector routinely makes of the sample sites, the licensee performs quarterly inspections of the air sample stations and annual inspections of all environmental stations and GSEP markers.

The inspectors toured selected Environmental Air Sample and Aquatic Sample Stations with the sample collector during his normal rounds. The air sample pumps were operating properly and flows had been checked on the proper frequency. The collector completed his required tasks properly and appeared to be quite knowledgeable regarding the program.

The inspectors reviewed corporate audit G-91-133 of the REMP vendor performed May 14-16, 1991. The audit listed seven quality assurance findings. Four were related to weaknesses in assuring the integrity of environmental air sampler calibration. The others involved problems with the vendor's corrective action performance, with its procurement system, and with its system of assuring the currency of laboratory procedures. The licensee has been diligent in followup of these matters and in pushing the vendor to improved performance. A followup audit is scheduled for the first quarter of CY 1991.

No violations or deviations were identified.

6. Post Accident Sampling System (IP 84750)

The inspectors examined the licensee's Post Accident Sampling System (PASS) documentation and verified that required QC tests and calibrations were being performed on the procedurally required frequency. The licensee exercises the system by collecting daily primary coolant samples. The inspectors observed the sample collection. No problems were noted during the collection. The licensee is currently trying to determine the best method for verifying the accuracy of the byte valve in the system. Observations and discussion with licensee personnel indicate the licensee is following the PASS program requirements.

No violations or deviations were identified.

7. Open Items

Open items are matters which have been discussed with the licensee, which will be reviewed further by the inspectors, and which involve some action on the part of the NRC or licensee, or both. Open items disclosed during the inspection are discussed in Sections 2.d and 4.a.

8. Exit Interview

The scope and findings of the inspection were discussed with licensee representatives (Section 1) at the conclusion of the inspection on January 10, 1992. The inspector discussed the progress in the PASS QC program and the action still remaining for completion of the special sampling study of the Kankakee River. Licensee representatives did not identify any documents or processes reviewed during the inspection as proprietary.