October 6, 1998

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: NRC INSPECTION REPORT 50-10/98016(DNMS)

Dear Mr. Kingsley:

On September 18, 1998, the NRC completed an inspection at your Dresden Unit 1 Station which examined decommissioning activities. The enclosed report presents the results of that inspection.

During the period covered by this inspection, activities in the areas of facility management and control, spent fuel safety, and radiological safety were examined, and followup inspection was conducted on a previously identified item.

Overall, the performance of reactor decommissioning activities was satisfactory. No violations or deviations 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 placed in the NRC Public Document Room.

Sincerely,

/s/ B. L. Jorgensen

Bruce L. Jorgensen, Chief
Decommissioning Branch

Docket No. 50-10
License No. DPR-2

Enclosure: Inspection Report 50-10/98016(DNMS)

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REGION III

Docket No:	50-010
License No:	DPR-2
Report No:	50-010/98016(DNMS)
Licensee:	Commonwealth Edison Company
Facility:	Dresden Station Unit 1
Location:	6500 N. Dresden Road Morris, IL 60450
Dates:	July 23, 1998 - September 18, 1998
Inspectors:	William G. Snell, Health Physics Manager Ross B. Landsman, Ph.D., Project Engineer
Approved By:	Bruce L. Jorgensen, Chief Decommissioning Branch Division of Nuclear Materials Safety

EXECUTIVE SUMMARY

Dresden Station Unit 1
NRC Inspection Report 50-10/98016(DNMS)

This routine decommissioning inspection covered aspects of licensee management and control, spent fuel safety, and radiological safety. Followup inspection was also performed on a previously identified issue.

Facility Management and Control

- Score cards used by the licensee to assess work activities as a pro-active initiative for improving work force performance appeared to be having a positive impact. (Section I.1).

- Work was observed to be carried out in an orderly and well thought out manner with adequate attention given to good work practices and worker safety. Good housekeeping practices were observed in the Turbine Building, the Spent Fuel Building, and within the Sphere. (Section I.2)

Spent Fuel Safety

- The systems that monitor the Spent Fuel Pool were adequate to detect any change in fuel pool level that would challenge fuel integrity. (Section II.1)

Radiological Safety

- Workers were knowledgeable of their work area dose rates and were employing good As-Low-As-Reasonably-Achievable work practices, which was being reflected in the low doses received for various work activities. (Section III.1)

- The licensee continued to make progress in the removal of radioactive waste from the radwaste vaults and tanks. Radiological controls associated with activities appeared to be adequate. There was no evidence of radiological contamination of the river sediment downstream of the Dresden Station. (Section III.2)

Report Details

Summary of Plant Activities

The licensee completed their characterization of spent Unit 1 fuel in the Units 2 and 3 Spent Fuel Pools (SFPs) while characterization of the fuel in the Unit 1 SFP was scheduled to begin in late September 1998. Waste removal activities for Radwaste Vaults 2 and 3 were temporarily suspended pending the issuance of a new vendor contract. Removal of material from the Unit 1 Sphere continued, and the asbestos abatement for Unit 1 was completed.

I. Facility Management and Control

I.1 Self-Assessment, Auditing and Corrective Actions

a. Scope (40801)

An assessment was made of a series of score cards developed by the licensee as an informal means of self-assessment and improvement.

b. Observations and Findings

The licensee had developed and initiated use of a series of eight score cards to be used by managers to assess work in progress. Areas covered by these score cards included communication, management effectiveness, housekeeping, procedure use, industrial safety, work practices, human error reduction indicators, and pre-job briefs. The goal was to increase the level of focus on work activities and provide a mechanism for giving immediate feedback to workers concerning job performance, which would result in a more attentive and better trained work force. Initially, all managers were being required to fill out at least one score card per week. In practice, managers were averaging about one per day, with 60 percent of the jobs being covered on a weekly basis. Deficiencies identified were required to be discussed on the spot with the workers. There was also a requirement for the workers to sign the checklist and a space for them to provide comments if desired.

Although these score cards had not been used for very long, the feed back from management was that it was having a positive effect in that the number of issues being identified was decreasing. As time progressed it was expected that the frequency for using the score cards would be reduced as identified deficiencies in work practices declined.

c. Conclusions

The score cards were a pro-active licensee initiative for improving work force performance which appeared to be having a positive impact.

I.2 Decommissioning Performance and Status Review

a. Scope (71801)

Decommissioning activities were evaluated to verify the licensee and its contracted work force were conducting decommissioning activities in accordance with licensed requirements. Plant tours were conducted to evaluate the material integrity of structures, systems, and components necessary for the conduct of safe decommissioning and to evaluate plant housekeeping.

b. Observations and Findings

The inspector attended a High Level of Activity briefing in preparation for the removal of a scavenger from the Unit 1 SFP. The briefing ensured that all personnel involved in the activity understood the scope of the work, what everyone's roles were, anticipated dose rates, and what actions to take in the event unexpected elevated dose levels occurred. Following the briefing, the inspector observed the removal of the scavenger from the pool. The work was carried out as planned with no problems noted. Throughout the job the workers demonstrated good work practices and conducted the job with attention to the As-Low-As-Reasonably-Achievable (ALARA) concept.

The inspector conducted several tours of the Unit 1 Turbine Building, the Spent Fuel Building, and the Sphere. Good housekeeping practices were noted in all areas. No problems were noted with the material integrity of structures, systems, and components observed that could be considered adverse to safety.

c. Conclusions

Work was observed to be carried out in an orderly and well thought out manner with adequate attention given to good work practices and worker safety. Good housekeeping practices were observed in the Turbine Building, the Spent Fuel Building, and within the Sphere.

II. Spent Fuel Safety

II.1 SFP Safety at Permanently Shut Down Reactors

a. Scope (60801)

The inspection evaluated the SFP and fuel pool safety. Factors considered in the evaluation included: siphon and drain protection; SFP instrumentation alarms and leakage detection; SFP chemistry and clean lines control; criticality controls; and SFP generation and power supplies.

b. Observations and Findings

The SFP system consists of two pools, the SFP and the fuel transfer pool, connected and separated by movable fuel pool gates. The pools are constructed of reinforced concrete that was originally epoxy coated. During the inspection the licensee was performing their three year fuel pool structural integrity inspection to monitor the integrity of the concrete.

Subsequent to the January 1994 potential loss of water event, the licensee took corrective actions that preclude a loss of water below the top of the fuel assemblies. The only opening below the normal water surface in the SFP is the opening between the SFP and the transfer pool. This is normally sealed with the fuel pool gates. Water in the transfer pool is maintained at the same level as in the SFP. Thus, even if the seals failed, water would not drain from the SFP to the transfer pool. The fuel transfer tube, the main concern of the 1994 event, has been welded shut with a blind flange and the tube is periodically inspected for leakage past the blind flange. To date no leakage has been observed.

The new SFP filter/demineralizer and all of its piping are located above the water level in the pool so the suction and return lines (one in each pool) cannot drain the pools. Nevertheless, the suction pump itself is located in the water in the SFP at an elevation above the top of the fuel. The discharge lines have anti siphon levels at the water surface to preclude siphoning. The filter/demineralizer system has a high delta-pressure cutout on the pump to preclude any inadvertent pool draining. The existing pipe penetrations into the transfer pool have either been cut and capped or had anti siphon holes added which are inspected periodically for blockage.

There are three independent supplies of makeup water for the SFP. Normal makeup comes from the site clean demineralized water system powered by normal AC power. An alternate path for makeup is available from the site contaminated demineralized water system, also powered by normal AC power. These two systems are sufficient for the amounts required to make up the normal evaporation losses. Large capacity makeup is available through either the contaminated demineralized system or the fire protection hose station in the SFP Building. Other close by sources of fire water can also be utilized for more makeup capacity on an as needed basis. There are two diesel driven fire pumps.

SFP instrumentation consisted of level, temperature and radiation alarms. Any significant water loss would be promptly detected by means of a fuel pool trouble alarm in the Control Room (CR) which monitors low water level and high water temperature. The level and temperature are also recorded every shift by local instrumentation. In addition, an area radiation monitor is located in the pool area which is also alarmed in the CR.

In response to the 1994 event, and because there was no leak detection system for the SFP, the licensee has initiated monitoring and trending of the level of the SFP. Water makeup is trended to detect any appreciable change that might be indicative of a degradation of SFP wall integrity. Normal loss of inventory is through surface evaporation which amounts to approximately 8 - 12 inches/month. However, the evaporation rate is highly dependent upon pool temperature, building temperature, humidity and any air flow across the pool surface. Since the licensee started monitoring after the 1994 event there has been no leakage observed. SFP chemistry and cleanliness control are excellent since the 1994 event with the addition of the new SFP water filter/demineralizer.

A variety of site requirements are in place to provide sufficient assurance that the spent fuel storage will preclude criticality. The only fuel moves anticipated in the near future are for the fuel characterization of the Unit 1 fuel bundles in preparation for dry cask storage. Acceptable geometry will be maintained throughout the moves. There are

heavy load handling limitations over the SFP. The rack system was designed to prevent criticality and calculations have shown that it would remain true with a dry pool.

At present, there is no system needed to cool the SFP since the Unit 1 fuel does not generate sufficient heat to require cooling.

b. Conclusion

The systems that monitor the SFP were adequate to detect any change in fuel pool level that would challenge fuel integrity.

III. Radiological Safety

III.1 Occupational Radiation Exposure

a. Scope (83750)

An inspection and evaluation were made of the radiation safety program to ensure that procedures and controls were adequate to minimize occupational exposure to radiological materials and to identify potential problem areas.

b. Observations and Findings

During tours of the Unit 1 Turbine Building, SFP and Sphere, the inspector noted that areas appeared to be properly controlled and appropriately posted. Observations of work in progress and discussions with workers determined that workers were properly dressed, understood the radiological controls for their work area, were cognizant of the dose rates, and that they were employing good ALARA practices. A number of workers were observed removing anti-Cs, using personnel contamination monitors, and conducting hand and foot frisks with G-M pancake probes. All practices observed were noted to be acceptable.

A review of dose goals for 1998 for Unit 1 determined that the accumulated dose as of September 1, 1998 was 37 person-rem, versus an annual goal of 48 person-rem. While most jobs were being completed with total doses well below the projected dose for the job, the one area where the actual dose was in excess of the initial goal was the Radwaste Vault removal project. This work activity had increased significantly in scope since it was started, which accounted for the higher than projected dose.

c. Conclusions

Workers were knowledgeable of their work area dose rates and were employing good ALARA work practices, which was being reflected in the low doses received for various work activities.

III.2 RadWaste Treatment, and Effluent and Environmental Monitoring

a. Scope (84750)

An inspection and evaluation were made of the radioactive waste treatment systems and activities. Soil samples were collected for the independent analysis of dredging spoils from the Illinois River.

b. Observations and Findings

The inspectors toured the radwaste yard and facilities to evaluate activities involving the removal of sludge/water from the radwaste vaults and tanks. Progress was slow but steadily progressing in the removal of the sludge from the radwaste vaults. The vendor's system for removing and drying the sludge and then depositing it into a high integrity container was working well. However, because of the significantly expanded scope and cost of the radwaste vault cleanup, Commonwealth Edison (ComEd) had halted this work to pursue a fixed cost contract for it's completion.

On July 27, 1998, the inspector accompanied ComEd personnel during the collection of environmental soil samples from along the Illinois River. The purpose was to sample dredging spoils resulting from past river dredging by the Army Corp of Engineers for the presence of radioactive contamination. Although it was assumed that no releases had occurred from the Dresden site over the years that could have contaminated the river sediment, the intent was to conduct sampling to verify if this was indeed the case.

ComEd personnel collected approximately 40 samples from two separate dredging sites downstream from Dresden and along the south side of the river, plus several control/background samples from upstream of Dresden. The NRC collected a total of 18 samples downstream of the Dresden site while one control/background sample was collected upstream. The NRC and ComEd analyzed the samples for manganese 54, iron 59, cobalt 58 and 60, zinc 65, and cesium 134 and 137. The NRC's results of analyses of the samples showed that all isotopes examined were at or below the background environmental levels, and were consistent with the results from the upstream control sample. The results of the samples analyzed by ComEd were similar to the results obtained by the NRC.

c. Conclusions

The licensee continued to make progress in the removal of radioactive waste from the radwaste vaults and tanks. Radiological controls associated with activities appeared to be adequate. There was no evidence of radiological contamination of the river sediment downstream of the Dresden Station.

IV. Previously Identified Violations and Deviations (92702)

(Closed) VIO 50-010/97013-02: Violation involving personnel failing to review radiation survey maps or otherwise verify dose rates prior to conducting equipment rounds in the Unit 2 Turbine Building. This violation occurred because surveys had not been performed to reflect changing

dose rates that had resulted from an increase in reactor power level. Because Unit 1 is permanently shut down and can therefore not have changes in dose rates due to changes in reactor power level, this item is not pertinent to Unit 1.

V. Management Meeting

The inspectors presented the inspection results to members of licensee management at the conclusion of the onsite portion of the inspection on September 18, 1998. The licensee acknowledged the findings presented. The licensee did not identify any of the documents or processes reviewed by the inspectors as proprietary.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

*B. Christel, Decommissioning Engineering Manager
*B. Kobel, Compliance Engineer
*J. N. Leech, Decommissioning Plant Manager Unit 1
J. Limes, Licensing/Compliance Engineer
*C. McDonough, Decommissioning Business Services Manager, and the Decommissioning Maintenance & Construction Manager
R. Norris, Unit 1 RP Lead Supervisor
F. Resick, ComEd Corporate Health Physicist

*Denotes those attending the exit meeting on September 18, 1998.

The Inspector also interviewed other licensee personnel in various departments in the course of the inspection.

INSPECTION PROCEDURES USED

IP 40801:	Self-Assessment, Auditing, Corrective Action
IP 71801:	Decommissioning Performance and Status Review at Permanently Shut Down Reactors
IP 60801:	Spent Fuel Safety at Permanently Shutdown Reactors
IP 83750:	Occupational Radiation Exposure
IP 84750:	Radioactive Waste Treatment, and Effluent and Environmental Monitoring
IP 92702:	Followup on Corrective Actions for Violations and Deviations

ITEMS OPENED, CLOSED, AND DISCUSSED

Closed

010/97013-02	VIO	Failure to verify dose rates prior to conducting rounds.

DOCUMENTS REVIEWED

Unit 1, Facility Operating License No. DRP-2, Amendment No. 39, Appendix A, Technical Specifications, Issued July 8, 1997