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[redacted]CHI,M.L. Wisconsin Public Service Corp.
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SUBJECT: Forwards response to NRC 961021 ltr re violations noted in insp rept 50-305/96-09 on 961004.Corrective actions: surrounding area was posted IAW regulation & Radiation Protection was notified.

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NRC-96-128

WISCONSIN PUBLIC SERVICE CORPORATION

600 North Adams • P.O. Box 19002 • Green Bay, WI 54307-9002

November 20, 1996

10 CFR 2.201

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Ladies/Gentlemen:

Docket 50-305
Operating License DPR-43
Kewaunee Nuclear Power Plant
Reply to Notice of Violation, Inspection Report 96-009

Reference: Letter from G. E. Grant (NRC) to M. L. Marchi (WPSC) dated October 21, 1996 (NRC Special Inspection Report No. 50-305/96009).

In the reference, the Nuclear Regulatory Commission (NRC) provided Wisconsin Public Service Corporation (WPSC) with the results of NRC special inspection activities which were completed on October 4, 1996. The special inspection was in response to plant staff identifying unusually high radiation levels associated with decontamination activities in the spent fuel pool transfer canal.

During the inspection, NRC identified one Severity Level IV violation. The violation was cited as failure to conduct adequate radiation surveys that were necessary to comply with the requirements of 10 CFR 20. Examples of conditions in violation of subparts 20.1502 and 20.1902 were provided as the basis for the violation.

WPSC disagrees with the first of the two examples used in support of the violation. Attached is our response to the notice. If you have any questions with regard to this response, please contact me or a member of my staff.

Sincerely,

for Mark L. Marchi
Manager - Nuclear Business Group



GIH
Attach.
cc: US NRC Senior Resident Inspector
US NRC Region III

IE06

260076

ATTACHMENT 1

Letter from M. L. Marchi (WPSC)

To

Document Control Desk (NRC)

Dated

November 20, 1996

Re: Reply to Notice of Violation, Inspection Report 96-009

**NRC Notice of Violation 96-009**

10 CFR 20.1501 requires that each licensee make or cause to be made surveys that may be necessary for the licensee to comply with the regulations in Part 20 and that are reasonable under the circumstances to evaluate the extent of radiation levels, concentrations or quantities of radioactive materials, and the potential radiological hazards that could be present.

Pursuant to 10 CFR 20.1003, *survey* means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation.

Contrary to the above, the licensee failed to make or cause to be made surveys that were necessary for the licensee to comply with the regulations in Part 20 as evidenced by the following examples:

A. As of September 13, 1996, the licensee did not make surveys to assure compliance with 10 CFR 20.1502(a)(1), which requires, in part, that each licensee supply and require the use of individual monitoring devices by adults likely to receive, in one year from sources external to the body, a dose in excess of 10% of the limits in 10 CFR 20.1201(a). Specifically, the licensce did not perform an adequate evaluation of the radiological hazards associated with a bucket containing highly radioactive material to determine if extremity monitoring for workers was required.

B. As of September 15, 1996, the licensee did not make surveys to assure compliance with 10 CFR 20.1902(a), which requires that each radiation area shall be conspicuously posted with a sign or signs bearing the radiation symbol and the words "CAUTION RADIATION AREA". Specifically, the licensee failed to perform surveys following the dumping of highly radioactive material into a radioactive waste drain line to determine if a radiation area had been created from this action. Subsequent surveys revealed that an unposted radiation area had existed in the area of the drain line.

WPSC Response

Wisconsin Public Service Corporation does not contest this violation. We concur on the NRC assessment of the condition described in example "B." However, we disagree with example "A."

Our assessment of the surveys that were taken is that the extent of the surveys was sufficient to provide personnel with enough information to conclude that extremity monitoring was not necessary. Additionally, our post-event calculations indicate that at no time were personnel subjected to radiological conditions which could have resulted in exposures greater than or equal to ten percent of 10 CFR 20 limits.

Our assessment of example B concluded that the conditions encountered during the disposal of contaminants down the floor drains should have resulted in further surveys to determine the impact.

Reason For Violation

A. As stated in the inspection report, the reason for part A of the violation was failure to perform an adequate evaluation of the radiological hazards associated with a bucket containing highly radioactive material in order to determine the need for extremity monitoring. WPSC disagrees with that conclusion for the following reasons:

1. The radiation hazards associated with the bucket were adequately evaluated using the contact radiation surveys taken on the lower perimeter of the sides of the bucket. The radiation dose rates observed prior to and during the evolution (5 - 20 rem/hour), the expected length of time to transport and dump the bucket (2 minutes), the expected position of the worker's extremities relative to the source of radiation in the bucket, and prior experience with jobs of a similar nature, led the Radiation Technologists covering the job to correctly conclude that extremity monitoring was not required.

2. During the investigation following this event, WPSC performed an evaluation of the extremity dose received by the worker who transported and dumped the bucket. This evaluation determined that the maximum extremity dose received by the worker was 111 mrem. If it is conservatively assumed that the bottom of the bucket read the same as the hotspot found later on the drain pipe, 75 rem/hour, then an extremity dose of 417 mrem can be calculated. Page 3 of NRC Inspection Report No. 96-009 states: "The inspectors evaluation of the possible extremity exposure indicated it could be as high as 500 mrem using more conservative assumptions." All of these evaluations were performed after the fact and confirm the correct decision made in the field by the Radiation Technologists that extremity monitoring was not required in accordance with 10 CFR 20.1201(a).

3. We also conducted a determination of what level of radiation would have been necessary to expose an individual to ten percent of the limits. This was performed by determining the ratio between 417 mrem (described above) and 5 rem (ten percent of the extremity limit). By applying this ratio to the 75 rem/hr used in determining the maximum exposure potential, we concluded that it would have taken a source of approximately 900 rem/hr. It is evident from this determination that the radiation levels obtained from the surveys of the bucket were well below those which would have been required for extremity monitoring.

4. The surveys performed by the Radiation Technologists were adequate to evaluate the need for extremity monitoring based on the paragraphs above. Therefore, there is no basis to conclude that a violation of the regulations has occurred as cited in part A. WPSC hereby requests that part A of this Notice of Violation be withdrawn.

B. WPSC concurs with part B of this Notice of Violation. Follow-up surveys of the affected portions of the floor drain piping system should have been performed after realizing that the lack of a bag filter in the floor drain had allowed radioactive material to be introduced into the plant's floor drain system. The resultant hotspot and the radiation area it created went undetected and unposted for approximately 54 hours. Had the workers reported the conditions encountered to supervision and/or initiated a Kewaunee Assessment Process (KAP) form, the hotspot in the downstream drain piping and the associated radiation area would have been quickly detected and posted.

Corrective Actions

Upon discovery of the hotspot in the drain line, the following actions were taken; the surrounding area was posted in accordance with regulations, Radiation Protection (RP) supervision was notified, an ALARA briefing was held and the hotspot was removed, a filter bag was installed in the floor drain, radiological controlled area (RCA) entry and exit logs for the previous three days were reviewed for unusual dose entries but none were found, a KAP form was initiated to capture all details and evaluate the event, and all Radiation Technologists were briefed on the event at their next shift turnover.

The events leading up to this Notice of Violation have provided the basis for a heightened awareness for similar jobs performed:

- A hot particle reading 900 rem/hour on contact was discovered on the floor of the refueling cavity following drain-down after fuel shuffle.

- A 6 rem/hour hotspot was discovered in a floor drain line downstream from a decontamination area in the Auxiliary Building.

- Hotspots reading up to 400 rem/hour were seen on the drain pipe running from the refueling cavity low point to the containment basement sump.

- All floor drains in the containment building were hydro-blasted to clean them and flush all debris to the containment basement sump.

- All debris and highly radioactive material was successfully removed from the containment basement sump and disposed of as radwaste.

In all of the above jobs, ALARA planning was the primary consideration. It included pre-job briefings, pre-planning and pre-staging of equipment, contingency planning, establishing radiological hold points, extensive surveys, frequent communication between workers and increased involvement by RP supervision. The Notice of Violation and the Inspection Report Details were made required reading for each member of the Radiation Protection Group. The NOV was posted for all plant staff to read.

Long term corrective actions to aid in preventing similar events from occurring in the future include:

1. Procedure upgrades to provide additional instructions for coverage of high dose rate jobs. The upgrades include; the use of ALARA planning checklists, radiological hold points and guidance on when to stop, make notifications and reevaluate the work in progress. These upgrades will be based on accepted industry guidelines and standards.

2. This and similar events will be included in continuing training for the Radiation Protection Group. The training will focus on increasing awareness of what happened in these events and emphasize a questioning attitude on future jobs and tasks. This will include further discussions of Kewaunee's problem identification system (KAP Process) and how it can be utilized to document, evaluate and mitigate problems and concerns identified by plant staff personnel.

Compliance Schedule

All short-term corrective actions have already been completed. Long-term corrective actions will be complete within three months after the end of the current steam generator repair outage, currently scheduled to finish the end of 1996.