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November 20, 1973

Mr. James G. Keppler
Directorate of Regulatory Operations
Region III
US Atomic Energy Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Re: Docket 50-175
License DPR-6

Dear Mr. Keppler:

Your letter of October 29, 1973 stated that certain of our activities under Operating License DPR-6 appeared to be in non-compliance with AEC requirements. Specifically, you state that the criticality monitor alarm set points have been set at greater than 20 milliRem per hour on several occasions which exceeds the limit established in 10 CFR 70.24(a)(1).

Our letter of October 2, 1973 to the Directorate of Licensing acknowledged that it is necessary to raise the alarm set point above the value established in 10 CFR 70.24(a)(1) during certain plant evolutions other than normal fuel handling to avoid spurious alarms. This letter was written after Mr. L. J. Hueter of your staff pointed out the apparent conflict between the regulation and our operations and requested exemption from the regulation during plant evolutions that would cause spurious alarms. The letter also stated that we were implementing tighter administrative control of these set point changes. One of the objectives of the tighter administrative controls is to ensure that the set point is returned promptly to its normal setting after the high background is removed. These administrative controls have been implemented on an interim basis and will remain effective until the exemption discussed in the following paragraph is received.

Based on recent discussions with the Directorate of Licensing personnel, we believe the exemption, when granted, will eliminate the criticality monitor alarm maximum set point value (20 mRem/h). This will allow the alarms to be set at higher values and should eliminate the need for changing the set points when handling materials that raise the background radiation levels.

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The monitor mounted on the steam drum cavity wall will be relocated closer to the new fuel storage to increase its sensitivity. This will allow a higher alarm setting, thus more margin with regard to spurious alarms. This facility change is scheduled to be completed by the end of the year.

We believe that timely corrective action was initiated shortly after Mr. Hueter's visit. Full compliance will be achieved when the exemption discussed above is issued.

We do not believe that this violation should be considered of Category II severity.

On October 12, 1973 the AEC gave notice in the Federal Register that it is considering amending 10 CFR 70.24. The proposed amendments eliminate the specific alarm set point requirements. The alarm set points at Big Rock Point have always been well within those required for detection of the accidental criticality condition prescribed by the proposed regulation. It is our opinion that the new regulations, if enacted, will not cause an increased risk to the health and safety of plant employees, the public, the common defense and security or the environment. Therefore, we believe this violation should be classed as Category III (procedural).

Your letter also refers to "...breakdown in administrative controls..." and requests that we discuss those actions taken to improve the effectiveness of our Management controls as they relate to the radiological protection program at Big Rock Point. The event described in the inspection report is inaccurate, probably because of a note that was annotated to the radiation protection log in the wrong place and the failure of our personnel to adequately communicate with Mr. Hueter during his inspection. Actually, there were two separate events which occurred 12 days apart which have been combined into one in Mr. Hueter's report. These events are reviewed in the following paragraphs. Corrective action taken is also included.

At 0237, March 8, 1973, the reactor level continuous air monitor (CAM) increased to 4500 cpm and the CAM at the personnel lock increased to 2500 cpm. Both CAMs are set for an alert signal by means of a flashing red light and a pulsed ringing bell at 3300 cpm which corresponds to one-half RCG based on I-131. The second alarm at both CAMs is set at 13,000 cpm which corresponds to 2 RCG based on routine calibration with simulated I-131.

At 0245, personnel (about 4) working on the reactor level were given half masks to wear. The half masks were on the reactor level since it is normal procedure to have respiratory equipment readily available while sipping fuel.

A "Hi-Vol" particulate and carbon filter was used to sample the air activity on the reactor level at 0250. An immediate gross β - γ count of the particulate filter indicated a level of 5×10^{-9} $\mu\text{Ci}/\text{cc}$. Based on this analysis, all personnel were removed from the containment sphere at 0300 until a spectrum analysis of both particulate and carbon filters was completed.

Spectrum analysis of the particulate filter showed mainly I-131 with small amounts of Cs-134 and Cs-137. The carbon filter was spectrum-analyzed at 0305 and showed Xe-133 and I-131. It was determined at that time that the increase in air activity was a result of the fuel sipping operation. (Bundle F-26 had been sipped and the CAM rise coincided with the lid being removed from the sipper can.) Based on the carbon filter spectrum and the fact that the reactor level and personnel lock CAMs had peaked at 5200 and 3900 cpm, respectively, and were decreasing, containment access was allowed with half masks. Operations on the reactor level resumed at approximately 0430. It should be noted that the CAMs did not reach RCG levels for I-131.

At 0450, gross gamma counts of the carbon filter in the scintillation well counter gave 1.95×10^{-8} $\mu\text{Ci}/\text{cc}$, assuming all of the activity was I-131. The RCG value for I-131 is 9×10^{-9} $\mu\text{Ci}/\text{cc}$ and with a protection factor of 10 (has since been changed to 5) for half masks, the value then becomes 9×10^{-8} $\mu\text{Ci}/\text{cc}$.

At approximately 0530, the reactor CAM reading declined to the normal level of 800 cpm at which time personnel in containment were allowed to remove their half mask status.

Based on our review of this incident, we have concluded that appropriate action was taken by radiation protection personnel and no further follow-up is required.

The second incident occurred at approximately 0115 on March 20, 1973. Two region repairmen were repairing the recirculating pump motor in Room 444. The Maintenance Supervisor left the area for a brief period of time during which time one of the repairmen used an air hose in Room 444 to blow dirt out of the motor. The reactor level and personnel lock CAMs increased to a maximum of 5000 and 8000 cpm, respectively. The senior technician advanced the filter tapes on both CAMs and the counts declined immediately to the normal range of 700-900 cpm. Both repairmen had minor contamination on their faces and hair which was removed with a shower. No work stoppage resulted from the air activity increase.

The activity release was of a short duration. At 0200, a particulate air sample gave 1.5×10^{-10} $\mu\text{Ci}/\text{cc}$.

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Radiation Protection Procedures were followed with the exception of using compressed air to clean contaminated equipment. This situation will be resolved by placing proper signs by air outlets in all controlled areas.

Yours very truly,

Ralph B. Sewell (Signed)

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Ralph B. Sewell
Nuclear Licensing Administrator