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May 25, 1989

Re: Indian Point Unit No. 2  
Docket No. 50-247

Document Control Desk  
US Nuclear Regulatory Commission  
Mail Station Pl-137  
Washington, DC 20555

SUBJECT: Deletion of 10 CFR 50, Appendix R Exemption for Manhole 21

This letter is to inform you that we are permanently removing the sand from Manhole 21 and its associated 10 CFR 50, Appendix R Exemption (NRC letter, dated October 16, 1984, Exemption 5) is no longer needed. In addition, the sand will no longer be needed to meet electrical separation criteria. Modifications to be completed during the ongoing 1989 Refueling Outage (RFO) will enhance the electrical separation within Manhole 21 and remove the Service Water System (SWS) pumps 23 and 24 power feeds routed through Manhole 21 that are part of the Alternate Safe Shutdown System (ASSS) which previously necessitated the Appendix R exemption.

Prior to the 1989 RFO the power feed routing for SWS pumps was configured as shown in Figure 1. Due to this original layout, without the sand, a postulated fire in Manhole 21 could have damaged both the normal and ASSS power feeds which could render all 6 SWS pumps inoperable. The ASSS was designed as a separate train of shutdown equipment subject to compliance with 10 CFR 50, Appendix R, Section III.G.3. Since Appendix R separation was not possible in Manhole 21, an exemption was sought using sand fill in Manhole 21 as a basis. By providing the sand, it would not be possible to support combustion in Manhole 21. In its October 16, 1984 letter, the NRC approved our request and issued Exemption 5. Subsequently, in our February 25, 1988 submittal on cable separation, we also took credit for the sand in Manhole 21 as providing a barrier between adjacent cables.

As discussed at our June 23, 1988 meeting with members of the NRC staff and described in our July 20, 1988 letter, the 1989 RFO modification will have the ASSS power feeds bypass Manhole 21 entirely. The new configuration is shown in Figure 2. In addition, cable separation in Manhole 21 will be maximized by reconfiguring the layout of some of the embedded conduits entering the manhole and rearranging the cables on seismic racks. The new installation will use lead covered cables with the cables for each SWS pump feeder wrapped together with arc proof tape. Since the lead provides a continuous ground path, any potential failures will go to ground and will clear prior to any damage being done to any other feeders. For the postulated locked rotor condition, this

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protection will clear the fault before the motor is damaged or the thermal limit of the cable is reached. Additional separation enhancement will be provided via the installation of siltemp blanket on selective sections of the SWS pump cables. Tests have been performed by Wyle Laboratories which demonstrate that zero separation between 2 sets of cables is adequate with respect to a fault on either cable set when one set is wrapped with siltemp. Since the completion of these modifications will put Manhole 21 in a status where it is no longer part of the ASSS and meets the requirements for protection against fault propagation without depending on sand, there is no longer a necessity to provide sand in Manhole 21.

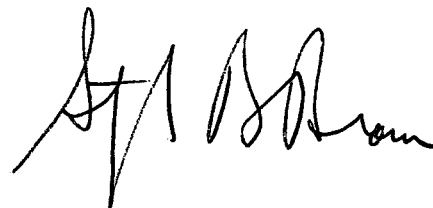
The new configuration will have the power feeds to SWS pumps 23 and 24 exiting the transfer switch boxes and routed above ground in metal conduits. These conduits will remain above ground from transfer switches EDG3 and EDG4 (outside Fire Zone 22) to SWS pumps 23 and 24 (inside Fire Zone 22). Taking into account the Appendix R Exemption for Fire Zone 22 (NRC letter, dated October 16, 1984, Exemption 4) there is no single postulated fire that would render all 6 SWS pumps inoperable.

In the new configuration, Manhole 21 functions as a typical manhole in the underground electrical distribution system, which consists of underground electrical ductbanks and manholes. Prior to the 1989 RFO, since shutdown could be achieved from the emergency control stations, the underground electrical distribution system (except Manhole 21) met the criteria of 10 CFR 50, Appendix R, Section III.G. Upon completion of the modifications, the underground electrical distribution system including Manhole 21, will meet the criteria of 10 CFR 50, Appendix R, Section III.G. The criteria of Section III.G. are met for the underground electrical ductbanks by the utilization of individual conduits embedded in concrete and for the manholes by not having all the power cabling, both normal redundant cabling and ASSS cabling, for any safe shutdown system routed through any single manhole. Therefore, safe shutdown of the plant can be achieved for any postulated fire in any one underground electrical ductbank conduit or a manhole.

Finally, due to the ongoing modifications and based on the above discussion, we plan to delete Fire Area N, Fire Zone 630 and other references to Manhole 21 as part of the next routine revision to the Indian Point Unit No. 2 Fire Protection Program Plan.

If you or your staff have any questions on this matter, please contact Mr. Jude G. Del Percio, Manager, Regulatory Affairs.

Very truly yours,



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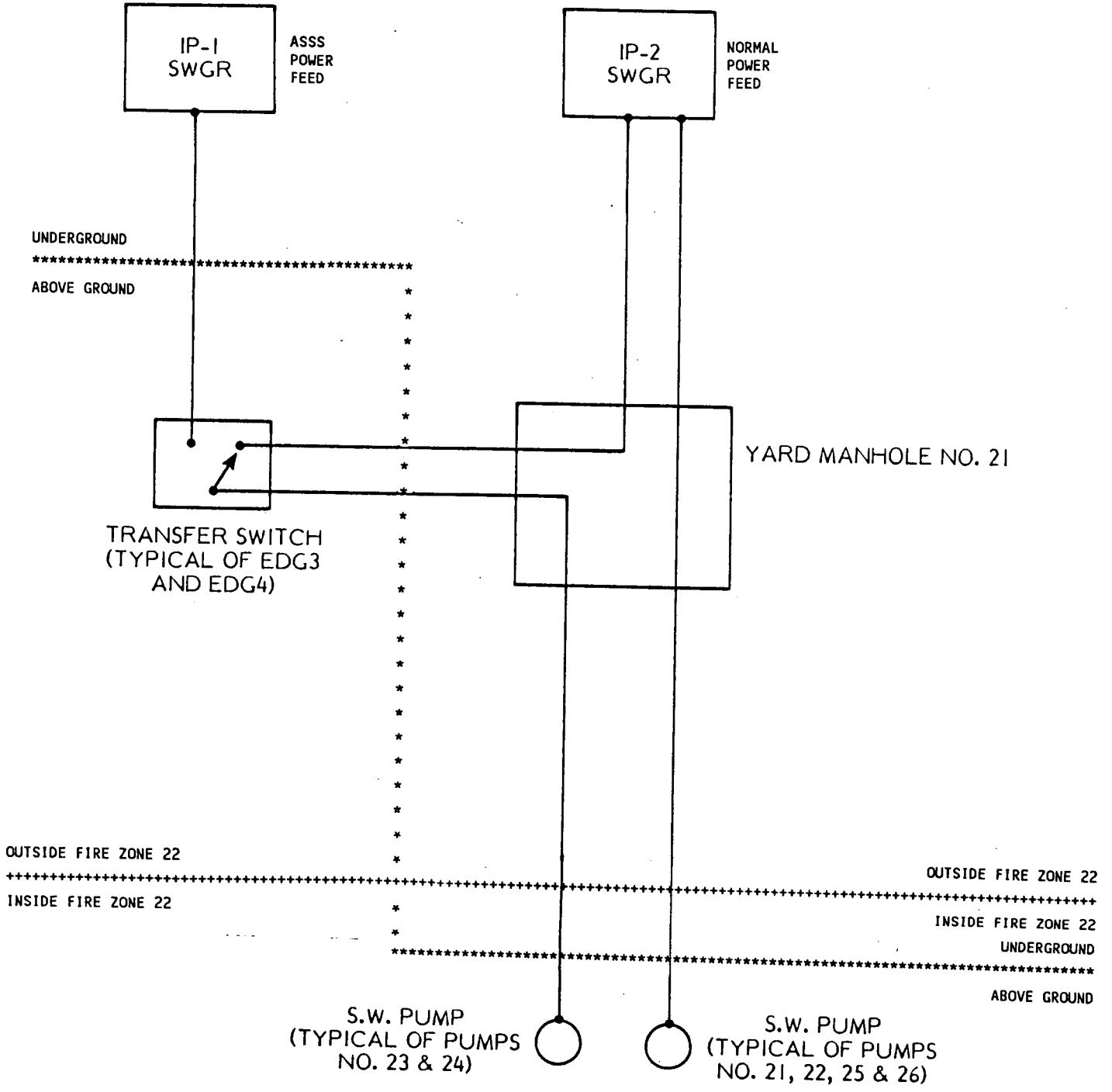


FIGURE 1

PRE-1989 REFUELING OUTAGE  
 TYPICAL ARRANGEMENT  
 SERVICE WATER PUMP POWER CABLES  
 ONE LINE

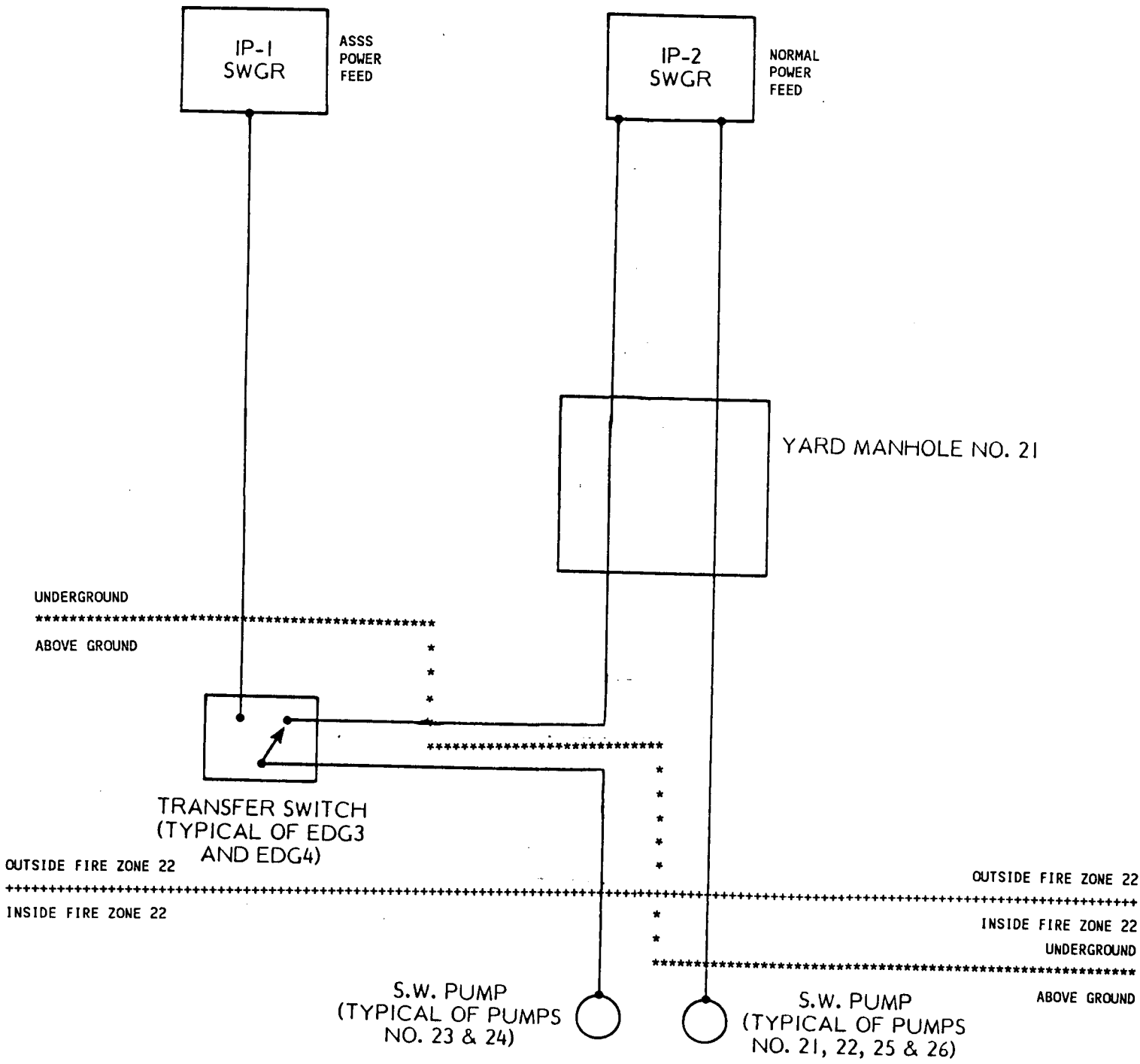


FIGURE 2

POST-1989 REFUELING OUTAGE  
 TYPICAL ARRANGEMENT  
 SERVICE WATER PUMP POWER CABLES  
 ONE LINE