

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of)	
)	
CONSUMERS POWER COMPANY)	Docket No. 50-155
)	
(Big Rock Point Plant))	

EXEMPTION

I.

The Consumers Power Company (the licensee) is the holder of Facility Operating License No. DPR-6 which authorizes the operation of the Big Rock Point Plant, located in Charlevoix County, Michigan. This license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

II.

Section 50.44(c)(3)(iii) of 10 CFR Part 50 requires, among other things, that high point vents be provided for the reactor coolant system, for the reactor vessel head, and for other systems required to maintain adequate core cooling if the accumulation of noncondensable gases would cause the loss of function of these systems. Section 50.44(c)(3)(iii) requires that these vents be provided by the end of the first scheduled outage beginning after July 1, 1982 and that the outage be of sufficient duration to permit required modifications. The existing Reactor Depressurization System (RDS) at Big Rock Point is capable of venting both the reactor coolant system and the

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reactor vessel. However, the emergency condenser at Big Rock Point is the highest point of the reactor coolant system and would not function if it were filled with noncondensable gases. By letter dated July 1, 1982, Consumers Power Company notified the NRC that high point vents had been installed on the emergency condenser, that preoperational testing had not been completed, and that further analysis had shown the usefulness of high point vents to be limited.

Subsequently, by letter dated April 19, 1983, the licensee requested an exemption to 10 CFR 50.44(c)(3)(iii) such that the required schedule for installation of the high point vents would be extended for the Big Rock Point Plant. The licensee also asked for an exemption from the requirement to install high point vents on the emergency condenser. The scheduler exemption was granted by the NRC on August 12, 1983, and extended the schedule for installation of high point vents until the first scheduled outage which begins after the completion of the Systematic Evaluation Program Integrated Assessment for Big Rock Point. This exemption now addresses the need to install high point vents at Big Rock Point.

The licensee's April 19, 1983 submittal gave the following explanation of why high point vents on the emergency condenser should not be required for Big Rock Point based upon the unique design of the plant.

"10 CFR 50.44(c)(3)(iii) and NUREG-0737, Item II.B.1 require that remotely operated high point vents be provided for systems required to maintain adequate core cooling following small-break LOCA's if the accumulation of non-condensable gases would cause the loss of function of these systems, e.g., isolation condensers. At Big

Rock Point, the emergency condenser is used for heat removal in the case of loss of the normal condenser, e.g., a loss of off-site power. However, the emergency condenser is not used, nor is any credit taken for its use, following core uncover and actuation of the reactor depressurization system (RDS).... A small-break LOCA results in actuation of the RDS. For accidents that result in generation of non-condensable gases, the RDS would vent these gases to the containment building. The RDS and post-incident system provide the heat removal capability in this situation. The emergency condenser is not needed, nor is it designed to be used during core damage situations in which the RDS is actuated."

The NRC reviewed the licensee's justification during the Big Rock Point Integrated Assessment. In order to generate significant amounts of hydrogen, the reactor core must become uncovered for a substantial period of time. After venting of noncondensibles, the emergency condenser could still not be used to cool the core unless reactor water level was restored to cover the core and system pressure remained high so that steam temperatures were substantially higher than emergency condenser shell side cooling water. Since the Big Rock Point Plant has no high pressure injection system, there is little possibility of recovering reactor water level while reactor coolant system pressure remains high since the low head core spray pumps could not inject water into the system at pressure. In accidents of this type at Big Rock Point, the reactor depressurization system (RDS) would be actuated to vent the primary system to the containment building. The RDS is single-failure proof and consists of four separate vent paths, three of which must function to reduce pressure rapidly enough to assure that the low pressure core spray pumps can

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III.

provide adequate core cooling. However, the actuation of any one of the four valves would vent all noncondensibles from the reactor vessel and reactor coolant system. The opening of a single valve would ultimately reduce reactor pressure to the point at which the core spray pumps could provide cooling water, but some core damage would have already occurred. Thus, the staff agrees with the licensee's conclusion that the emergency condenser is not likely to be useful in accidents which might result in the generation of noncondensable gas. The staff concludes that an exemption to 10 CFR 50.44(c)(3)(iii) should be granted such that the installation of high point vents on the emergency condenser is not required at Big Rock Point.

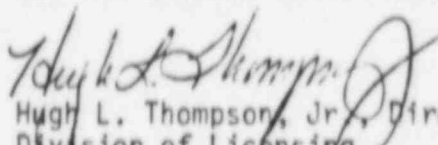
Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, an exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. Therefore, the Commission hereby grants an exemption from the requirement of 10 CFR 50.44(c)(3)(iii) that high point vents be installed on the emergency condenser.

Pursuant to 10 CFR 51.32, the Commission has determined that the issuance of this exemption will have no significant impact on the environment (July 8, 1985, 50 FR 27865).

This exemption is effective upon issuance.

Dated at Bethesda, Maryland, this 17th day of July 1985.

FOR THE NUCLEAR REGULATORY COMMISSION


Hugh L. Thompson, Jr., Director
Division of Licensing