

UNITED STATES GOVERNMENT

Memorandum

TO : Files B DATE: AUG 21 1964
 (Thru) Roger S. Boyd, Chief
 Research & Power Reactor Safety Branch
 FROM : Marvin C. Gaske *Marvin C. Gaske*
 Research & Power Reactor Safety Branch
 Division of Reactor Licensing
 SUBJECT: MEETING REGARDING JERSEY CENTRAL CONSTRUCTION PERMIT APPLICATION

50-219

A meeting was held on August 6, 1964 to discuss various problems which have arisen in the review of Jersey Central's application for a Construction Permit for the Proposed Oyster Creek Nuclear Power Plant. Present at this meeting were the following:

<u>Name</u>	<u>Organization</u>
D. E. Hetrick	J. C.
D. R. Reas	J. C.
W. I. Collett	G. E.
I. F. Stuart	G. E.
J. B. Violette	G. E.
A. P. Bray	G. E.
R. A. Huggins	G. E.
W. W. Lowe	PWL
H. R. Denton	Co.
R. T. Carlson	Co.
L. Kornblith, Jr.	Co.
M. M. Mann	REG.
R. L. Doan	DRL
R. S. Boyd	DRL
M. C. Gaske	DRL
I. Spickler	DRL
R. L. Waterfield	DRL
B. Grimes	DRL

Some of the more significant items discussed at this meeting are as follows:

a) Safety Valves Venting to the Dry Well

Although it is debatable whether the safety valves venting to the dry well and having the potentiality of scalding an individual is an item which should be considered by the Division of Reactor Licensing, this matter was, nevertheless, discussed with the representatives of Jersey Central in some detail. The Jersey Central personnel indicated considerable concern regarding this problem and that they would give it further consideration. It was suggested that one solution to the problem might lie in venting the safety

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valves to a water storage tank located within the dry well. Such a tank could have sufficient capacity to quench the steam released by the safety valve for a long period to permit individuals to escape from the dry well. ^{sufficiently}

b) Design of Instrumentation System

The representatives of the Division of Reactor Licensing commented on the shortcomings of the design of the nuclear instrumentation system which General Electric plans to provide for the reactor. Among the deficiencies discussed were the following:

- 1) Lack of adequate electrical isolation between the scram logic channels.
- 2) Absence of period scram protection.
- 3) Manual scram circuits not independent of automatic scram system.
- 4) Inability to test directly for solenoid pilot valve operation.
- 5) Apparent absence of interlock to preclude bypassing the picoammeter low (flux) level trips at the higher power levels.

After the meeting, the representatives of the Division of Reactor Licensing emphasized to the General Electric representative that the indicated deficiencies and possible solutions discussed should not be interpreted as an effort by the Division of Reactor Licensing to design the instrumentation system for the Jersey Central reactor. The General Electric representatives were informed that whatever final design General Electric reaches should be one that is acceptable to them and not merely one which is designed to meet objections of the Division of Reactor Licensing.

Although the above deficiencies were noted, it was agreed that problems with the design of the instrumentation system need not be resolved prior to issuance of the Construction Permit.

c) Use of Variable Recirculation Flow to Control Power

Representatives of the Division of Reactor Licensing stated that it would not be acceptable for the reactor to be operated in such a condition that between 10 and 20% of the fuel would have a DNB ratio less than one at the

overpower scram set point. They were informed that procedures alone would probably not be sufficient to resolve this problem. General Electric agree to give the matter further consideration in a effort to find an acceptable solution. It was also agreed that this matter need not be resolved prior to the issuance of the Construction Permit.

d) Provisions for Emergency Power

Jersey Central representatives stated that they will provide another source of emergency power for the facility, in addition to the sources described in the "Preliminary Safeguards Summary Report." They preferred ~~to designate~~ not to designate at this time what the additional power source would be. They thought, however, that an additional incoming electrical line would be used to supply another source of emergency power. There is some question as to the independence of this electrical line from the other sources of outside electrical power. This is due to the fact that the outside line passes through the same substation as all other incoming power lines to the facility.

e) Effect of Use of Zircaloy Fuel Element Cladding on Possible Accidents

The credibility of a zirconium-water accident which would produce sufficient hydrogen to result in the presence of an explosive mixture of hydrogen and oxygen in the pressure absorption system was discussed at length. It appears that it is General Electric's position that it is not credible that sufficient zirconium would react with water to produce an explosive mixture in the pressure absorption system. They believe that if 23% of zirconium reacted with water there would still be barely enough hydrogen at any point in the system for an explosion to occur. Further, it is their opinion that the explosive mixture would exist in the atmosphere above the pressure absorption system water and that there would be no source of ignition present in this area.

f) Maximum Worth of an Individual Control Rod

General Electric personnel stated that, should experimental evidence indicate that a rod ejection accident would involve unacceptable consequences if individual rods have reactivity worths as high as 2.5%, they will limit the maximum worth of an individual control rod to a smaller

value. They stated that this could be done through use of the rod worth minimizer without too serve a handicap to reactor operations. They indicated that the minimizer could probably be used to limit individual control rod worth to a maximum reactivity value of 1.5%.