

CONTENTIONS

1) Clam biofouling

Applicant has not properly accounted for the presence of biofouling organisms in the nuclear power plant's source of process water and the resultant impacts.

Specifically, certain Asiatic clams (corbicula fluminea) have displayed strong biofouling abilities and a proclivity for steam-electric generating plants similar to Perry 1 and 2. L.B. Ross, et al., "Control Studies On Corbicula For Steam Generating Plants," First International Corbicula Symposium, Tex. Christian U. at 139 (1977). There is at least a fifty percent chance that Lake Erie is suitable for corbicula.

Several impacts must be thoroughly considered. First, necessary control methods can cause unacceptable environmental impact. Chemical biocides can alter and severely harm existing aquatic biota other than target species.

Secondly, "chunking" (massive detachment) of clams could cause partial blockage of intake vessels and condensers, leading to a loss of coolant accident.

Finally, the financial aspects of this necessary maintenance must be assessed. If alternative control methods are utilized, eg. manual cleaning, there should be provident allocation of funds to meet the task. Applicant must demonstrate a program for control that will not permit biofouling beyond a certain extent. Efficiency loss should be minimized and hazardous buildups prevented.

2) Diesel generator reliability

The plant's diesel generators for on-site electricity generation are not highly reliable. Applicant must provide for further redundancy in this system to

assure that (1) specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded as a result of anticipated operational occurrences and (2) the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

10 CFR Part 50, App. A, Criterion 17. The St. Lucie difficulties with this system would mandate that Applicant include not two, but three(3) diesel generating systems (independent) with at least two different suppliers/manufacturers for those three

units. Florida Power & Light Co. (St. Lucie Plant, Unit 1), ALAB-603 (1980).

3) Radiation blocking agent

To provide further assurance to OCRE members and the public living near the Perry plant, Applicant should include a program to distribute potassium iodide, a radiation blocking agent, to every household within ten miles of the plant in its operation plans.

Dr. Jan Beyea, former consultant to the President's Council on Environmental Quality, indicated in March, 1981 that use of this agent in the area of a nuclear plant (TMI, Unit 1) would both protect the thyroid gland from radioactive iodine and help calm citizen fears during a nuclear crisis. The fact that this type of program is already routine in Sweden lends further support to demanding a similar program of Applicant. UPI, Harrisburg, 3/28/81.

4) Steam injury

Applicant must demonstrate that its maintenance program on steam valves is conducted in a safe manner so that technicians and maintenance workers necessary to the safe operation of the plant are not injured by escaping steam.

The recent accident at Sequoyah Unit 2 in which five workers were burned while testing a valve on a steam line points out the need for greater assurance in this area. Personnel loss in strategic areas could easily lead to violations in operating procedures and unsafe operation. (The Sequoyah accident occurred 4/19/81.)

5) Hydrogen bubbles

OCRE contends that the Perry containment buildings could not sustain a hydrogen burn similar to the one which occurred at TMI Unit 2. Containment failure could gravely harm the interests of OCRE members everywhere.

6) Pressure vessel cracking

OCRE contends that Applicant has not provided reasonable assurance that its operating activities can be conducted without endangering the health and safety of OCRE members and the public in that

A. Cracks in the pressure vessel would be very difficult to detect before they led to catastrophic failure;

B. The growth of small cracks, though harmless at first, would necessitate their repair in reactor conditions. Currently, no equipment is available to grind out and soundly weld up cracked regions in radioactive steel by remote automatic methods. If the cracks were not fixed and permitted to grow, Applicant would then have the decision of either taking the chance of running the reactor or shutting it down at a fraction of its planned economic life.

Nature, vol. 283 at 84 (Feb. 28, 1980).

7) Premature decommissioning

Applicant does not have the funds necessary to decommission the Perry plant prematurely should a TMI-type accident occur.

In the aftermath of a TMI-type accident, Applicant's solvency would be imperative for the health and safety of OCRE members and the public. Applicant will need to promptly institute clean-up procedures to reduce further public jeopardy while maintaining containment integrity throughout that clean-up. The current financial straits of General Public Utilities(TMI) demonstrate that responsible and safe operation of a nuclear plant includes adequate preparation for such contingencies.

8) Computer surveillance of RPV

OCRE contends that Applicant has not met the requirements of 10 CFR Part 50, App. A, Criterion 32 which mandates "an appropriate material surveillance program for the reactor pressure vessel(RPV)."

Applicant has not adequately considered all RPV surveillance techniques, specifically the computer mentioned by Oak Ridge Laboratory. ORNL/CSD/TM-135.

9) Machining defects in RPV

Applicant has not met the reasonable assurance burden in regard to the RPV integrity and the defects which occurred during machining. Interim report 50-440-148 (Nov. 5, 1975). To assure adequately all OCRE members, Applicant must conduct further testing of the RPV prior to criticality stage.

10) Demonstrable need

Pursuant to 10 CFR Part 51, Applicant must show that there is a demonstrable need for the Perry plant. OCRE contends that this requirement has not been met, thus needlessly subjecting the public and OCRE members to potential harm from escaped radiation.

Applicant has failed to:

- a) Take into account in its growth projection all significant factors affecting demand;
- b) Provide for a complete internalization of all significant external costs so that the total cost of electricity is charged to those using it;
- c) Account for the impact of energy conservation measures (both voluntary and involuntary);
- d) Consider adequately the effect of alternative price designs, such as peak load pricing, which will discourage demand; and
- e) Take into account the possibility of interconnection as a means of meeting peak demand.

A reassessment of these factors by Applicant is necessary to meet the applicable regulations.

11) Plant site

OCRE contends that the site is not suitable for the safe operation of a nuclear power plant pursuant to 10 CFR, Part 100 in that:

- a) The seismology of the site, and specifically the underlying fault, are unfavorable and have not been adequately compensated for by increasing the number of engineered safeguards;
- b) The original investigation pursuant to Appendix A of the above-mentioned part and resulting exoneration of the geologic anomaly were tainted by Applicant's financial interest in the outcome of that investigation; it is invalid as a basis for safety considerations;
- c) The population center distance is too short in light of the accident at TMI and recommendations in the Rogovin report;

d) The hypothetical fission product release assumed by Applicant in determining an exclusion zone, low population zone, and a population center distance is underestimated in light of TMI occurrence and renders said determinations invalid.

OCRE recommends that:

e) An independent and objective investigation of the site be conducted pursuant to Appendix A of Part 100;

f) Should this second investigation indicate unfavorable seismic conditions, Applicant must provide additional engineering safeguards to compensate for those conditions or, in the alternative, Applicant must not receive a license to operate the Perry plant;

g) Perry plant not be operated beyond fifty percent of its current 3579 megawatts thermal rating; as distance cannot be regarded as an ultimate defense-in-depth barrier to OCRE members living near the plant site, reduced power limits are a necessary mitigation and preventive measure to protect the health of those OCRE members. Rogovin Report, Vol. 1 at 130;

h) Applicant assume for its hypothetical fission product release the TMI occurrence.

Following these recommendations can help assure that no accidents releasing significant quantities of radioactive fission products will occur and injure OCRE members or their children.

12) CANDU alternative

Applicant should be required to operate a CANDU nuclear steam system because of its lower occupational and environmental radiation doses. AECL-5523 (1975). NEPA directives require Applicant to consider those alternatives to its facility which are available and reduce or avoid adverse environmental or other effects.

13) Pipe break (scram discharge volume)

OCRE contends Applicant's reactor trip system is not protected against a pipe break to the scram discharge volumes from the hydraulic control units. Upon a reactor trip, hot water rushing from the reactor vessel to the scram discharge volume would thermally shock the connecting pipes to the extent fracture is likely.

This event would be harmful to OCRE members because a rupture of this nature could allow coolant water to continue flowing out of the reactor vessel and/or drain out, short out, or otherwise stop the recirculation pumps located beneath the break. In both instances, overheating of the core can result. There is no valve upstream of the break locations to permit stopping of loss of coolant. The core overheating could lead to partial or whole meltdown that would breach containment and release fission products.

This contention is based on a report authored by Carlyle Michelson and sent to NRC commissioners April 7, 1981. The report contains the results of the investigation of the June 29, 1980 partial scram failure at the Brown's Ferry, Unit 3 nuclear plant.

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