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ENGINEERING AND RESEARCH DEPARTMENT

Mr. A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, DC 20555

June 15, 1984

Subject: Limerick Generating Station, Units 1 and 2
Response to Procedures and Systems
Review Branch (PSRB) Questions

Reference: NRC and PECO. telecon dated April 27, 1984

File: GOVT 1-1 (NRC)

Dear Mr. Schwencer:

The attached information is provided in response to NRC Staff questions regarding Limerick emergency procedures. These questions were provided by M. McCoy (PSRB) in the reference telecon.

Very truly yours,

John S. Kimpen

DRH/cmv/O3

Attachment

Copy to: See the attached Service List

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Selection of LGS Containment Vent Pressure

The BWR Owners Group (BWROG) has developed symptom based Emergency Procedure Guidelines (EPG's) in response to NRC TMI Lessons Learned requirements (NUREG-0737, Item I.C.1). The EPG's provide a generic framework for the development of plant unique Emergency Operating Procedures (EOP's). Since they are symptom based, the EPG's and EOP's do not pertain to any specific event but, rather, provide operator guidance for all plant situations whether or not they are beyond the plant's design basis.

The EPG's call for venting of the primary containment at the primary containment pressure limit. In all situations where this step is taken the plant will be significantly beyond its design basis. This procedural step has been described to the NRC and approved on a generic basis (see F. B. Litton (NRC) memo for K. Kniel (NRC) dated May 10, 1984 and D. G. Eisenhut (NRC) letter to BWROG dated February 4, 1983). Determination of a suitable primary containment pressure limit requires plant unique evaluation.

A pressure of 70 psig has been selected for use as the containment pressure limit in the Limerick emergency procedures. Venting of the primary containment will be initiated at this pressure using the following vent paths in the indicated order of preference:

- 2" Suppression Pool Vent to SGTS
- 2" Drywell Vent to SGTS
- 6" ILRT Line from Supp. Pool
- 18" Supp. Pool Purge
- 24" Supp. Pool Supply
- 4" Drywell Sump Drain Lines (2)
- 24" Drywell Purge
- 24" Drywell Supply
- 6" ILRT Line from Drywell

The indicated containment pressure limit and the ranking of vent paths has been based on consideration of a number of interrelated issues:

- This pressure (1.3 times design), is somewhat greater than the Structural Integrity Test pressure (1.15 times design). Structural deformations are not expected to be substantially different than those observed during the structural integrity test and margin will exist to containment ultimate structural capability. Venting will minimize the potential for indeterminate containment failure modes and the uncontrolled releases of containment atmosphere which would accompany a structural failure.

- The isolation valves in the above lines vent paths have been determined to be operable (i.e. - for opening and closure) for differential pressures ranging from 76 psid to over 150 psid. Initiation of the venting sequence at the selected pressure limit will assure that venting is not begun before conditions warrant and that the vent valves will be used before pressures challenging their operability are reached.
- Each of the indicated containment vent paths has differing levels of desirability with regard to fission product retention, potential for causing adverse reactor enclosure environmental effects, and potential for equipment damage. It has been judged to be preferable to favor avoidance of potentially adverse reactor building environmental conditions over the dose reduction benefit that would be revised from plateout, dilution, and delay in the reactor building for almost all situations. This judgement is based on the fact that high radiation source terms will not exist for virtually all cases when containment venting is used in accordance with the emergency procedures.
- The indicated sequential use of available vent paths will minimize the rate of containment depressurization and limit the rate of release to that required to stabilize containment pressure since the vent paths are used in order from small to large. It is expected that only a few of these lines would be needed under any circumstances.
- At the indicated pressure limits, the pneumatic supply pressure required for operation of the ADS SRV's will be within the capability of the installed systems.

Limerick Procedure T-200 will contain the detailed operating procedures relative to the use of the various containment vent paths.

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