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AUG 24 1984

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Docket Nos.: 50-352
50-353

Subject: Limerick Generating Station, Units 1 and 2
Request for Additional Information
NUREG-0737 Items II.F.1 Attachments 1 and 2,
and Item III.D.1.1.

References: 1) Letter, A. Schwencer to E. G. Bauer, Jr. dated May 9, 1984.
2) Letter, J. S. Kemper to A. Schwencer dated July 27, 1984.

File: GOVT 1-1 (NRC)

Dear Mr. Schwencer:

The reference 1 letter requested additional information on the subject NUREG-0737 Items. Information pertaining to Item II.F.1 was provided in the reference 2 letter, which also committed to submit information pertaining to Item III.D.1.1 in September, 1984. The information on Item III.D.1.1 is being provided in the attached draft FSAR pages and will be incorporated into the FSAR revision scheduled for September, 1984.

Sincerely,

John S. Kemper

DFC/mlb/08178401

cc: See Attached Service List

B001
1/1

cc: Judge Lawrence Brenner (w/enclosure)
Judge Peter A. Morris (w/enclosure)
Judge Richard F. Cole (w/enclosure)
Troy B. Conner, Jr., Esq. (w/enclosure)
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Atomic Safety & Licensing Appeal Board (w/enclosure)
Atomic Safety & Licensing Board Panel (w/enclosure)
Docket & Service Section (w/enclosure)
Mr. James Wiggins (w/enclosure)
Mr. Timothy R. S. Campbell (w/enclosure)

For Information only
No Changes Required

Staffing of the EOF and the TSC is described in the Limerick Emergency Plan, Table I.1.

• III.A.2 EMERGENCY PREPAREDNESS

Position

(1) Each nuclear facility shall upgrade its emergency plan to provide reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency. Specific criteria to meet this requirement is delineated in NUREG-0654 (FEMA-REP-1), "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparation in Support of Nuclear Power Plants."

(2) Perform an emergency response exercise to test the integrated capability and a major portion of the basic elements existing within emergency preparedness plans and organizations.

Response

Emergency planning is discussed in Section 13.3.

• III.D.1.1 PRIMARY COOLANT OUTSIDE CONTAINMENT

Position

Applicants shall implement a program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as-low-as-practical levels. This program shall include the following:

(1) Immediate leak reduction

(a) Implement all practical leak reduction measures for all systems that could carry radioactive fluid outside of containment.

(b) Measure actual leakage rates with system in operation and report them to the NRC.

(2) Continuing Leak Reduction--Establish and implement a program of preventive maintenance to reduce leakage to as-low-as-practical levels. This program shall include periodic integrated leak tests at intervals not to exceed each refueling cycle.

Clarification

Applicants shall provide a summary description, together with initial leak-test results, of their program to reduce leakage from systems outside containment that would or could contain primary coolant or other highly radioactive fluids or gases during or following a serious transient or accident.

(1) Systems that should be leak tested are as follows (any other plant system which has similar functions or postaccident characteristics even through not specified herein, should be included):

(a) Residual heat removal,

(b) Containment spray recirculation,

(c) High-pressure injection recirculation,

(d) Containment and primary coolant sampling,

(e) Reactor core isolation cooling,

(f) Makeup and letdown (pressurized water reactors only), and

(g) Waste gas (includes headers and cover gas system outside of containment in addition to decay or storage system).

Include a list of systems containing radioactive materials which are excluded from program and provide justification for exclusion.

(2) Testing of gaseous systems should include helium leak detection or equivalent testing methods.

(3) Should consider program to reduce leakage potential release paths due to design and operator deficiencies as discussed in our letter to all operating nuclear power plants regarding North Anna and Related incidents, dated October 17, 1979.

Response

A review of all systems designed to handle highly radioactive fluids during or after a serious transient or accident has been performed to ensure that appropriate design features to minimize leakage have been included. System isolation provisions have been reviewed in conjunction with this effort (Section 6.2.7). A leak reduction program for these systems will be implemented prior to fuel load to measure actual leakage rates and to identify sources of leakage in order that total leakage may be reduced to as-low-as-practical levels. The leakage reduction program is described in Section 6.2.8.

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The October 17, 1979 NRC generic letter regarding radioactive releases at North Anna Unit 1 expanded the scope of NUREG-0737 Item III.D.1.1 to include a review of potential radioactive release pathways which would not be related to the handling of highly radioactive fluids during or after a core damage event. This generic letter required ..."that release paths exemplified by the North Anna Unit 1 incident or similar release paths as identified in IE Circular 79-21 should also be considered."

In response to this request per clarification (3), above, a review has been performed to identify all potential unplanned release paths for radioactive fluids during normal plant operation. As shown in Table 1.13-4, it has been determined that existing design provisions and administrative controls are sufficient to prevent unplanned and unmonitored releases of radioactivity.

During our review of IE Bulletin 80-10, all interfaces between normally non-radioactive and radioactive systems were identified. It was determined that design provisions adequately maintain boundaries between non-radioactive/radioactive interfaces (Item 4 in Table 1.13-4). These design provisions include one of the following:

a) Two normally closed valves in series

b) One normally closed valve and one check valve in series

c) Two check valves in series

d) Heat exchanger tube sheets (in most cases, the non-radioactive fluid is maintained at a higher pressure than the radioactive fluid).

In the event that leakage or operator errors (e.g. valve mispositionings or incorrect valve lineups) lead to contamination of a non-radioactive system, the Process Sampling System and numerous grab sampling points for the following normally non-radioactive systems are provided to support a routine contamination monitoring program:

a) Circulating Water

b) Reactor Enclosure Cooling Water

c) Turbine Enclosure Cooling Water

d) Clarified Water

e) Makeup Demineralizers

f) Drywell Chilled Water

g) Auxiliary Steam (both steam and feedwater)

h) Plant Waste Water Effluent

i) Service Water

j) Instrument and Service Air

In addition to the above sampling provisions, the following systems are monitored for radioactive contamination by the Process Radiation Monitoring System:

a) Emergency Service Water and RHR Service Water

b) Reactor Enclosure Cooling Water

c) Service Water

In the event a non-radioactive system is found to be contaminated, corrective action will be taken to prevent leakage to the environment and isolate and repair the source of the contamination.

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TABLE 1.13-4

Potential Unplanned Release Paths

	System (s)	Boundary	Potential Release Path	Administrative Control
1.	Air Removal & Sealing Steam	HV-07-142, -143, -144, -145, (Normally Closed)	Airborne contamination release (local) if valves left open after equalizing pressures	Operating procedure requires valve closure
2.	Liquid Radwaste Equipment Drain Processing	62-0021 (Normally Closed)	Airborne contamination release (local) if valve is left open	Operating procedure requires valve closure
3.	Control Rod Drive	XF-47-1F180 XF-47-1F181 XF-47-1F010 XF-47-1F011 (All valves fail closed)	Scram discharge header volume release to DRW or Equipment Drain Collection Tank	Operating procedure provides precaution notice
4.	Various Non-radioactive Systems	Valves or heat exchanger tube sheets	Potential cross contamination at radioactive/non-radioactive system interfaces	Routine analysis in chemistry surveillance
5.	Plumbing & Drainage	Open area drains and/or equip. drains	Inappropriate use of segregated drain systems	Precaution notices, drain plugs, curbs, and/or color coded labels around drains to identify
6.	Plumbing & Drainage	Open area and/or equipment drains inside reactor enclosure (air supply fan area and refueling floor)	Open drains are a potential path for air flow from secondary containment, if the 1/4" w.g. negative pressure is interrupted	Controlled opening of plugged drains

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TABLE 1.13-4 (Cont'd)

	System (s)	Boundary	Potential Release Path	Administrative Control
7.	Liquid Radwaste Collection	Offsite disposal of sump oil	Sump oil is potentially contaminated	Chemistry sample analysis required prior to disposal
8.	Liquid Radwaste & Waste Water	Release of final radwaste batch to cooling tower blowdown (monitored)	Unauthorized release (inadvertant)	Routine surveillance

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