OCT 3 1 1974

Docket No. 50-346

The Toledo Edison Company
ATTN: Mr. Lowell E. Roe
Vice President, Power
Edison Plaza
300 Madison Avenue
Toledo, Ohio 43652

Gentlemen:

As a result of our continuing review of the Final Safety Analysis Report (FSAR) for Davis-Besse Nuclear Power Station, Unit 1, we find that we need additional information regarding accident analysis. The requests for additional information are enclosed and are based upon the FSAR information and your responses to our first-round requests. Your response to these requests is needed by February 28, 1975 in order that we can maintain our review schedule.

Sincerely,

Original signed by

A. Schwencer, Chief
Light Water Reactors Branch 2-3
Directorate of Licensing

Enclosure:
As stated

ccs: See next page

8001150851 A

ccs: Donald H. Hauser, Esquire
The Cleveland Electric Illuminating Company
P. O. Box 5000, Room 610
Cleveland, Ohio 44101

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ACCIDENT ANALYSIS

Request No.

6.2.2.4 Your response to Request 6.2.24 does not address the ability of the emergency ventilation system to pull down the annulus to negative pressure nor does it provide the details and sensitivity of the pressure tests to be conducted on the annulus volume as was requested. Provide this information.

15.4.4 We have reviewed Section 15.4.8 (revisions 1 and 3) and the response to Request 15.4.4 with respect to chlorine protection against the provisions in the attachment. It appears that adequate protection for control room occupants against chlorine has been provided with the exception of the requirement for a bottled air supply for breathing apparatus.

In this regard indicate how you will meet the bottled air provision as described in the attachment hereto.

15.4.7 Section 15.4.6.6 (Revision 1) states that the analysis of the effects of a turbine room steam-line rupture on control room habitability is in progress. The analysis or its results are not apparent in the FSAR revisions to date. Indicate when the analysis will be completed.

Attachment

PROVISIONS FOR ADEQUATE PROTECTION AGAINST A CHLORINE RELEASE

Adequate protection of the control room against an on-site chlorine release will be achieved if provisions are included in the plant design to isolate the control room automatically to limit the potential build-up of chlorine within the control room, and if equipment and procedures are provided to assure immediate use of breathing apparatus by the control room operators. Similar precautions would help mitigate consequences of most postulated toxic gas releases.

To accomplish the automatic isolation quick-response chlorine detectors should be located in the fresh air inlets to the control room. These detectors should be able to detect and signal a step increase in chlorine concentration within a time period not to exceed 3 seconds. The detectors should be capable of signaling a step increase from zero to 15 ppm of chlorine by volume or greater. Detectors should be provided at the control room fresh air inlet for all plants that have storage facilities that might accidently release a total of 500 pounds of chlorine. Additional detectors should be provided at chlorine storage locations that are less than 100 meters from the control room or that may release more than 3 tons of chlorine as a result of any postulated accident. These detectors should be placed, and the detector trip point adjusted, so as to assure detection of a leak or a container rupture. Detector trip signals should initiate automatic isolation of the control room and provide an audible alarm to the operators. The means used to initiate automatic isolation should meet single active failure and seismic criteria.

Control room isolation should be accomplished within about seven seconds after detector trip. Adequate isolation requires all openings to the control room to have low leakage characteristics. This would include doors, dampers. and penetrations. Total infiltration into the isolated control room should be less than 100 cfm assuming a 1/8" water gage pressure differential across all openings and the maximum operating differential across the isolation dampers upstream of recirculating fans. This leakage limit should be reduced to 25 cfm if chlorine storage is within 100 meters of the control room or if more than 3 tons of chlorine can be released as a result of any postulated accident.* Normal fresh air make-up should be limited to no more than 1 to 1 1/2 air changes per hour. An administrative procedure should provide all doors leading to the control room be kept closed when not in use.

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* These leakage rates are based on a control room volume of 100,000 cubic feet and thus should be adjusted as directly proportional to actual control room volume.

Control room isolation should be followed immediately by the start-up and operation of the emergency recirculating charcoal filter or equivalent equipment designed to remove or otherwise limit the accumulation of contamination within the control room.

Under certain meteorological conditions control room isolation may not be sufficient by itself to limit chlorine concentrations to levels below those which cause physical discomfort or disability. Therefore, the use of self-contained breathing apparatus should be considered when developing a chlorine release emergency plan. Since calculations indicate that rapid increases in chlorine concentrations are possible, emergency plan provisions and rehearsal of these provisions for immediate donning of breathing apparatus on detection of chlorine release are necessary. Storage provisions for breathing apparatus and procedures for use should be such that operators can begin using the apparatus within two minutes after an alarm. Donning of breathing apparatus should be mandatory prior to the determination of the cause of an alarm.

A toxic environment may be present for several days or longer if a chlorine leak cannot be fixed or the leaking container removed. In any event, adequate bottled air capacity (at least six hours) should be readily available on-site to assure that sufficient time is available to locate and transport bottled air from off-site locations. This off-site supply should be capable of delivering several hundred hours of bottled air to the members of the emergency crew.

Isolation and air supply equipment relied on should accommodate a single failure of an active component and still perform the required function. (In the case of self-contained breathing apparatus this may be accomplished by supplying one extra unit for every three units required.)

Protection requirements for plants located nearby other facilities that store significant quantities of chlorine or plants located nearby major chlorine transportation routes will be determined on a case-by-case basis. Similarly plants having storage facilities that might accidentally release a total of 500 pounds of chlorine or less will be reviewed on a case-by-case basis to determine need for protection against accidental release.