REGULATOR[redacted]NFORMATION DISTRIBUTION S[redacted]TEM (RIDS)

ACCESSION NBR:8201040084 DOC.DATE: 81/12/30 NOTARIZED: YES DOCKET #
FACIL:50-331 Duane Arnold Energy Center, Iowa Electric Light & Pow 05000331
AUTH.NAME AUTHOR AFFILIATION
ROOT,L.D. Iowa Electric Light & Power Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.. Office of Nuclear Reactor Regulation, Director

SUBJECT: Forwards partial response to NUREG-0803, "Generic Safety Evaluation Re Integrity of BWR Scram Sys Piping," forwarded by Generic Ltr 81-34. Equipment qualification area info will be submitted by 820212.

DISTRIBUTION CODE: A001S COPIES RECEIVED:LTR 1 ENCL 1 SIZE: 5
TITLE: General Distribution for after Issuance of Operating License

NOTES:

	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL	RECIPIENT ID CODE/NAME		COPIES LTTR	COPIES ENCL
ACTION:	ORB #2 BC	01	13	13				
INTERNAL:	ELD		1	0	IE	06	2	2
	NRR/DHFS DEPY	08	1	1	NRR/DL DIR		1	1
	NRR/DL/ORAB		1	0	NRR/DSI/RAB		1	1
	REG FILE	04	1	1				
EXTERNAL:	ACRS	09	10	10	LPDR	03	1	1
	NRC PDR	02	1	1	NSIC	05	1	1
	NTIS		1	1				

MA
4

JAN 07 1982

TOTAL NUMBER OF COPIES REQUIRED: LTTR 35 ENCL 33

27

Iowa Electric Light and Power Company
December 30, 1981
LDR-81-353

LARRY D. ROOT
ASSISTANT VICE PRESIDENT
OF NUCLEAR DIVISION

Mr. Harold Denton, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Dear Mr. Denton:

Enclosed is our partial response to NUREG-0803 transmitted to us by Generic Letter #81-34 dated August 31, 1981 regarding safety concerns associated with pipe breaks in the BWR Scram System. Plant-specific input for the Duane Arnold Energy Center (DAEC) is provided for all but the "equipment qualification" area requested by the NUREG. As described in the enclosure, we will submit the response requested by not later than February 12, 1982 for this area.

Three signed and 37 additional copies of this letter are transmitted herewith. This letter and enclosure are true and accurate to the best of my knowledge and belief.

IOWA ELECTRIC LIGHT AND POWER COMPANY

BY Larry D. Root
Larry D. Root
Assistant Vice President
Nuclear Generation

Subscribed and sworn to Before Me on this 30th day of December 1981.

Kathleen M. Nelsen
Notary Public in and for the State of Iowa

LDR/BE/dmh*

cc: B. Ellis
NRC Resident Office
K. Eccleston (NRC)

A001
S 1/1

ENCLOSURE FOR LDR-81-353

DUANE ARNOLD ENERGY CENTER (DAEC)
PLANT-SPECIFIC RESPONSE TO NUREG-0803
"GENERIC SER REGARDING INTEGRITY OF BWR SCRAM SYSTEM PIPING"

This enclosure utilizes Section 5 of the NUREG as the basis for the DAEC-specific evaluation and response. Table 5.1 identifies 13 items of guidance in 3 areas of concern: Piping Integrity (PI), Mitigation Capability (M) and Environmental Qualifications (EQ). Our responses are identified by these abbreviations and numbered in the order of their presentation (i.e., PI1, PI2,...,M1,...,EQ1,...).

PI1: Periodic inservice inspection and surveillance for the SDV system.

RESPONSE: Iowa Electric is revising its inservice inspection and testing programs to include the CRD and SDV piping. This piping will be subjected to the ISI/IST requirements for (as a minimum) Class 2 piping of the Section XI Code.

PI2: Threaded joint integrity.

RESPONSE: Not applicable to DAEC per Table 5.1 note (*).

PI3: Seismic design verification
PI5: As-built inspection of SDV piping and supports

RESPONSE: The analytical and as-built verification of the CRD/SDV piping seismic integrity has been addressed earlier as part of IE Bulletins 79-02, 79-14 and 80-17. In a letter to Mr. Keppler (Region III) of August 11, 1980 (Iowa Electric letter number LDR-80-227), we provided substantial details regarding the above points. This was in response to a telecopied "Request for Additional Information Regarding CRD Systems" from Region III on August 8, 1980. Review of this response along with analyses, tests and inspections made subsequent to the response allow us to make the following statements:

a) CRD/SDV piping and components are designated, designed and supported to comply with Seismic Category I requirements (see our response to question 4 of the above correspondence).

b) CRD/SDV piping supports have been as-built verified to conform with the seismic/stress analyses (IE Bulletin 79-14 requirements).

c) Bolted supports have been evaluated and shown to conform with the requirements of IE Bulletin 79-02.

Modifications found to be required as a result of these bulletins have been completed.

PI4: HCU-SDV equipment procedures review

RESPONSE: In regard to NUREG-0803, paragraph 3.2.1.8, we will review, and modify as necessary surveillance, maintenance, inspection and modification procedures which we believe have the potential for defeating SDV integrity. In our estimation, this modification will ensure that the procedures contain sufficient guidance to ensure that the loss of SDV system integrity will not occur at times when such integrity should be available.

This review and modification will be completed by January 8, 1982.

M1: Improvement of procedures

RESPONSE: Per its charter, the BWR Owners' Group cannot respond directly to NRC requests for utility action, except at the discretion of its members. Neither can Iowa Electric commit the Owners' Group to a specific course of action except by its participation in Owners' Group decisions by vote. Thus, Iowa Electric can only provide a response to the staff's guidance to the BWR Owners' Group in NUREG-0803 as if it was addressed to Iowa Electric directly.

However, the BWR Owners' Group has discussed the guidance of NUREG-0803 regarding modification of the Emergency Procedure Guidelines and acknowledges the benefits of treating the subject generically. The BWR Owners' Group is in the process of completing an extension of the Guidelines to include steps for reactivity control, and certain other modifications to the Guidelines which have been discussed with your staff. It is Iowa Electric's judgement that completion of these modifications outweighs, in immediate importance, the NUREG-0803 guidance for other guideline modifications. After current activities on the Guidelines are substantially complete, Iowa Electric will support a preliminary study by the BWR Owners' Group to determine the best approach to fulfilling the intent of the guidance provided in NUREG-0803. It is not clear that the best approach will involve modification of the Guidelines. When that study is complete, currently expected to be near the end of the first quarter of 1982, the Owners' Group will determine whether to authorize specific actions to modify the Emergency Procedure Guidelines. Iowa Electric will advise you of the result of that decision and the Owners' Group's plan at that time.

M2: Limitation of coolant iodine concentration to Standard Technical Specification (STS) values (plus note, "**", at the bottom of table)

RESPONSE: NUREG-0803, paragraph 5.2.2 allows for the demonstration of low coolant activity levels in lieu of proposing revised coolant activity levels conforming with STS valves.

In order to demonstrate that the stated conditions could be met, a review of the reactor coolant dose equivalent I-131 was made for the last five years. The average valves are provided below:

1977	3.66×10^{-4} μCi/gm
1978	6.79×10^{-4} μCi/gm
1979	8.67×10^{-4} μCi/gm
1980	1.06×10^{-3} μCi/gm
1981 to Sept.	9.45×10^{-4} μCi/gm

From this data it can be seen that the average value is well below the STS value of 0.2 μCi/gm. Also, at no time during the last five years does our data indicate that DAEC reactor coolant I-131 concentrations exceeded the STS value.

Fuel designs have been improving steadily over the past several years. One of the main goals of new fuel designs has been to reduce the incidence of "leakers". However, since our reactor coolant I-131 concentrations have historically been very low, it is probably unrealistic to expect much improvement.

From the above data it can be projected that the probability of DAEC operating with reactor coolant I-131 concentrations in excess of those allowed by STS is less than 10^{-3} per reactor year. Thus we do not propose any changes to our present technical specification limits.

EQ1: Environmental qualification of prompt depressurization function

EQ2: Verification of equipment designed for water impingement

EQ3: Verification of equipment qualified for wetdown by 212°F water

EQ4: Verification of feedwater and condensate system operation independent of the reactor building environment

EQ5: Evaluation of availability of HPCI-LPCI (sic) turbines due to high ambient temperature trips

EQ6: Verification of essential components qualified for service at 212°F and 100% humidity

RESPONSE: For the purposes of this response, the above six (6) items will be divided into two (2) groups of items. One group (EQ1, EQ4 and EQ5) relates to the assurance that specific

systems (ADS, Feedwater/Condensate, HPCI & RCIC) are verified to remain operable in the event of an SDV pipe break and the resulting reactor building environment. The second group (EQ2, EQ3 and EQ6) relates to the assurance that equipment used for leak detection and needed for unisolable break mitigation (see NUREG-0803 paragraph 5.3 (1) & (2)) is qualified for the local environment created by the break (i.e., 212°F, 100% humidity, wetdown/impingement or the plant-specific environment determined).

The former group identifies specific systems or functions associated with the detection and mitigation of the break. These are but a portion of the total number of systems and components which would be used to detect and needed to mitigate the consequences of the break both prior to and after the depressurization of the reactor coolant system. Many of these systems and components are included within the purview of our existing IE Bulletin 79-01B program. Some, however, have not previously been identified as requiring environmental qualification. We are completing a listing of such equipment associated with both detection and mitigation functions but will not be prepared to submit it to you until February 12, 1982 by which time we will have much greater assurance of the completeness and accuracy of the listing.

In addition, by February 12, 1981, it will be possible to continue our program development regarding the determination of DAEC-specific break environments associated with the latter group of EQ concerns. Also, the nature and type of commitment to qualification of the equipment will be provided at that time.