Doc 123 56

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)
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REC: STOLZ J F
NRC

ORG: CRANE P A
PACIFIC GAS & ELEC

DOCDATE: 06/13/78
DATE RCVD: 06/23/78

DOCTYPE: LETTER NOTARIZED: NO
SUBJECT:
RESPONSE TO NRC LTR DTD 03/10/78...FORWARDING INFO RE APPLICANT"S PROPOSAL FOR IMPLEMENTING POSITION C.3 OF REG GUIDE 1.97 AND ANALYSIS OF HOW THE PROPOSAL CONSIDERS POSITION C.4 THROUGH C.13 IS CONTAINED.

COPIES RECEIVED
LTR 1 ENCL 40

PLANT NAME: DIABLO CANYON -- UNIT 1

REVIEWER INITIAL: XJM
DISTRIBUTOR INITIAL: mc

********** DISTRIBUTION OF THIS MATERIAL IS AS FOLLOWS **********

NOTES:
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EXTERNAL:	LPDR'S	
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Misc Appl. 4

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June 13, 1978

Mr. John F. Stolz, Chief
Light Water Reactors Branch No. 1
Division of Project Management
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Re: Docket No. 50-275-OL
Docket No. 50-323-OL
Diablo Canyon Units 1 & 2

Dear Mr. Stolz:

The response to your letter of March 10, 1978, concerning our proposal for implementing Position C.3 of Regulatory Guide 1.97 and our analysis of how the proposal considers Position C.4 through C.13 is contained in the attachments to this letter.

We, however, disagree with Regulatory Guide 1.97 in several important respects. Our support lies with the position of the Atomic Industrial Forum Ad Hoc Committee on Post Accident Monitoring Instrumentation of which we are a member. We support their contention that:

1. The extension of instrument ranges into Class 9 (1) events (accidents more severe than design basis events) is a major departure from current regulatory practice and is a major escalation of current design bases.

2. The increased requirements are unjustified since the probability of such events is exceedingly small.

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(1) Regulatory Guide 4.2, Appendix I

3. If such highly unlikely events were to occur, little if any benefit could be derived from these higher instrument ranges since current instrument ranges are adequate to allow planned operator action, initiate the plant emergency plan, and protect public health and safety.

4. Guidance in your March 10 letter states that accident analyses based on methods used in WASH-1400 are acceptable while ignoring a basic finding of WASH-1400 which is that risks from accidents more severe than current design bases are extremely small.

5. There are many other sound technical arguments against the instrument ranges specified in Position C.3. Several of these are presented in the attached response, and additional arguments will be presented to the Staff in a letter from the Ad Hoc Committee of the AIF to the Office of Nuclear Reactor Regulation.

As with other issues, we do not intend to allow this issue to delay the licensing of Diablo Canyon. However, we feel a responsibility to voice legitimate objections to increased regulatory requirements which we feel are unjustified. We hope the Regulatory Staff will reconsider its position.

Five copies of this submittal have been sent directly to Mr. Dennis Allison.

Kindly acknowledge receipt of the above material on the enclosed copy of this letter and return it to me in the enclosed addressed envelope.

Very truly yours,

Philip A. Crane, Jr.

Attachments
CC w/enc.: Service List

IMPLEMENTATION OF REGULATORY GUIDE 1.97

REVISION 1 (POSITION C.3) AT DIABLO CANYON

We have completed our review of the Regulatory Guide and have investigated various methods for complying with Position C.3. This resulting proposal discusses instrumentation which we believe (1) will meet the intent of the position, (2) can be manufactured and qualified using existing technology, (3) and will be reliable.

The following, then, is our point by point proposal to meet Position C.3 of Regulatory Guide 1.97, along with our proposed action plans for the protection of the health and safety of the public.

POSITION C.3a

The design pressure of the Diablo Canyon concrete containment structure ranges from 47 psig (with a concurrent double design earthquake) to 70 psig (with no earthquake). We propose to supply two transmitters with recorders in the control room with a range of 0-200 psig. The transmitters will be mounted outside of containment and will tie into existing containment pressure sensing lines. These lines are attached to bellows mounted inside of containment. The existing sensing systems are rated at 3000 psig.

ACTION PLAN: If the containment pressure were to exceed the design pressure, in accordance with our site emergency plan, we would recommend to the local agencies that the low population zone (LPZ) be evacuated.

POSITION C.3b

Our evaluation indicates that the most severe hypothetical accident would result in radiation level of 1.45×10^6 R/hr, nearly two orders of magnitude

lower than the 10^8 R/hr level given in this position. Since the magnitude of this radiation level is an important consideration in specifiying appropriate instrumentation, we believe that the Regulatory Guide should be reconsidered with respect to this Position.

We, therefore, propose to put two detectors outside containment on the steel equipment hatch which will be calibrated to measure inside of containment radiation levels from 10 R/hr up to 10^7 R/hr. Readouts would be mounted in the control room and the output would be recorded.

ACTION PLAN: If the radiation level inside the containment were to exceed 350 R/hr corrected to time zero, indicating some fuel melting, we would, in accordance with our site emergency plan, recommend to local agencies that the LPZ be evacuated.

POSITION C.3c

The reactor coolant system design pressure is 2250 psig. We propose to provide two monitors to measure 0-6750 psig. The transmitters would be mounted outside of containment, and be tied to the Reactor Coolant System by means of sealed systems. Each sealed system would consist of a bellows seal inside of containment separating it from the Reactor Coolant System, tubing through the penetration with a special fill fluid, and the transmitter outside of containment. Recorded outputs from the transmitter would be supplied in the control room.

ACTION PLAN: If the pressure exceeded design pressure we would trip the reactor (if it had not already tripped) and take or verify actions to relieve the pressure.

POSITION C.3d

The design of the Diablo Canyon ventilation system is such that all ventilation exhausts discharge through a single plant vent. This includes

the ventilation for all ECCS equipment and the containment purge systems. The entire area around the containment is directly exposed to the atmosphere and has no ventilation system. Therefore, we are unable to monitor specific release points from the containment penetration area by conventional means. The most severe release rate through the plant vent was obtained using a simple, one volume containment calculation for a core melt with the containment purge valves open. Using data from WASH-1400, Appendix V, for Accident Sequence ACDB, we determined the following maximum releases:

Nuclide Group	Max. Release Rate (Ci/hr.)	Max. Concentration in Plant Vent (μCi/cc)
I 131	1.7×10^7	593
Noble Gases	1.13×10^8	3960
Iodines (Total)	1.23×10^8	4320
Other Nuclides	1.17×10^7	410
Total Nuclides		8690

We propose to add two plant vent monitors with ranges from 10^{-3} to 10^4 μCi/cc. This will provide a one decade overlap with our existing instrumentation. We expect that it will be necessary to use multiple instruments for each monitoring channel to cover this range. We do not believe that we can differentiate iodines from the noble gases. Since the noble gases are also collected efficiently on charcoal, a charcoal filter will not preferentially collect the iodines. In our existing plant vent monitoring system I-131 is measured using single channel analyzer set to measure the

364 KeV peak. A background correction channel analyzer is made by subtracting out the average of the 305 and 423 KeV peaks (the end points of the 364 KeV peak). However, under accident condition, the relative quantity of I-131 would be low compared to the relative quantity during normal operations. The I-131 peak would be located on a very high Compton ridge from high energy short half life noble gas gammas. This high background will introduce large inaccuracies into the determination of the I-131 peak height.

ACTION PLAN: If the total release exceeds that value which would result in an integrated whole body dose of 500 MREM (assuming a 24 hour exposure) we would recommend to local agencies that affected sectors be evacuated. This determination would be made by coupling release data with atmosphere dilution factor information.

The following is an analysis of how our proposal considers each of the positions C.4 through C.13.

POSITION C.4

All devices will comply with the intent of Regulatory Guide 1.89. All field mounted devices will have environmental qualifications which meet or exceed the expected requirements. All control room devices will be environmentally qualified by an on-going monitoring program. No end-of-life tests will be performed for control room devices since the required environment is not elevated above normal ambient. All devices will have seismic qualifications which meet or exceed the expected requirements.

POSITION C.5

All monitors will have recorders mounted in the control room.

POSITION C.6

All parameters will be measured using mutually redundant channels.

POSITION C.7

All mutually redundant channels will be powered from separate Class IE station power, and shall be separated in accordance with Regulatory Guide 1.75.

POSITION C.8

All devices will measure the process variable directly.

POSITION C.9

No instruments will be the same as the normal process instruments due to the ranges involved.

POSITION C.10

The Diablo Canyon Control Board is full. Therefore, all of this equipment will be mounted on racks in the back of the control room and will be delineated as post accident gear on those racks.

POSITION C.11

This position is not applicable since all devices will be used only for post accident monitoring.

POSITION C.12

The radiation monitors can be checked using check sources. The Reactor Coolant Pressure Monitor should conincide with the normal Reactor Pressure Monitor. The Containment Pressure Monitor can be checked by drawing a vacuum on the atmospheric side of the transmitter.

POSITION C.13

Service, testing and calibration programs will be specified as required.