



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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CAN BE RELEASED

June 17, 1988

MEMORANDUM FOR: Victor Stello, Jr.
Executive Director for Operations

FROM: Edward L. Jordan, Chairman
Committee to Review Generic Requirements

SUBJECT: MINUTES OF CRGR MEETING NUMBER 137

The Committee to Review Generic Requirements (CRGR) met on Wednesday, June 8, 1988 from 1-4 p.m. A list of attendees for this meeting is attached (Enclosure 1). The following items were addressed at the meeting.

1. M. Malsch (OGC) and S. Crockett (OGC) presented for CRGR review a proposed draft rule, 10 CFR Part 52, on Site Permits, Design Certifications, and Combined Licenses. The Committee did not complete their review of this matter at this meeting, but planned to continue their review and provide final comments and recommendations during the week of June 13, 1988. This matter is discussed in Enclosure 2.
2. C. Rossi (NRR) and C. Berlinger (NRR) presented for CRGR review a proposed NRC Bulletin, Thermal Stresses in Piping Connected to Reactor Coolant Systems. The Committee recommended in favor of issuing the proposed bulletin, subject to several minor clarifying modifications (to be coordinated with the CRGR staff). This matter is discussed in Enclosure 3.
3. A. Thadani (NRR) and V. Thomas (NRR) briefed the Committee on the staff's proposed Safety Evaluation Report on generic report BAW 47-115091-00, the B&W Owners Group response to the requirements in the ATWS rule (10 CFR 50.62). The Committee concluded that the report did not require formal review by CRGR, because it only implements the legal requirements in the ATWS rule and previously-approved staff positions. This matter is discussed in Enclosure 4.

*forwarded
to Comm
6/20/88*

In accordance with the EDO's July 18, 1983 directive concerning "Feedback and Closure on CRGR Reviews," a written response is required from the cognizant office to report agreement or disagreement with the CRGR recommendations in these minutes. The response, which is required within five working days after receipt of these minutes, is to be forwarded to the CRGR Chairman and if there is disagreement with CRGR recommendations, to the EDO for decisionmaking.

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Questions concerning these meeting minutes should be referred to Jim Conran (X29855).

Original Signed by
E. L. Jordan

Edward L. Jordan, Chairman
Committee to Review Generic
Requirements

Enclosures:
As stated

cc w/enclosures:
Commission (5)
SECY
Office Directors
Regional Administrators
CRGR Members
W. Parler
M. Malsch
C. Rossi
A. Thadani

Distribution: w/o enc.
Central File
PDR (NRC/CRGR)
S. Treby
W. Little
M. Lesar
B. Doolittle (w/enc.)
CRGR SF (w/enc.)
CRGR CF (w/enc.)
M. Taylor (w/enc.)
E. Jordan (w/enc.)
J. Heltemes (w/enc.)
J. Conran (w/enc.)
C. Sakenas (w/enc.)

OFC	: CRGR:AEOD	: AFOD:DD	: C. CRGR:AEOD	:	:	:
NAME	: JConran:cg	: CJHeltemes	: ELJordan	:	:	:
DATE	: 6/ /88	: 6/ /88	: 6/17/88	:	:	:

Enclosure 1
ATTENDANCE LIST
CRGR MEETING NO. 137

June 8, 1988

CRGR

E. Jordan
J. Sniezek
R. Bernero
C. Paperiello
J. Goldberg
G. Arlotto (for D. Ross)

NRC STAFF

J. Heltemes
J. Corran
J. Wilson
T. Cox
M. Taylor
Z. Rosztoczy
M. Malsch
S. Goldberg
R. Bangart
S. Treby
C. Y. Cheng
M. Hartzman
N. Kadambi
W. Lanning
C. Berlinger
E. Rossi
B. Collins (NRC consultant)
V. Thomas
R. Kendall
S. Newberry
A. Thadani

Enclosure 2 to the Minutes of CRGR Meeting No. 137
Proposed Rule on Standardization
June 8, 1988

TOPIC

M. Malsch (OGC) and S. Crockett (OGC) presented for CRGR review a proposed draft rule, 10 CFR Part 52, on Site Permits, Design Certifications, and Combined Licenses intended to implement both the Commission's revised Policy Statement on Nuclear Power Standardization and, to the extent permitted by present statutory law, the license reform legislation proposed by the Commission to Congress last year. Copies of the briefing slides used by the staff to guide their presentations and the discussions with the Committee on the proposed draft rule at this meeting are enclosed (see Attachment 1 to this enclosure).

This draft rule is related to, but is broader in scope, than two Commission papers reviewed recently by the Committee (i.e., "Standardization of DOE-Sponsored Advanced Reactor Designs," and "Key Licensing Issues for DOE-Sponsored Advanced Reactor Designs"). The most recent version of the (Part 52) draft rule is intended to reflect the Committee's comments and recommendations on those two Commission papers; see enclosed excerpts from the minutes of CRGR Meeting Nos. 135 and 136 (Attachments 2 and 3 to this enclosure).

BACKGROUND

1. The Part 52 draft rule package was transmitted initially to CRGR for review by memorandum dated April 19, 1988, W. C. Parler to E. L. Jordan; that initial review package included the following:
 - a. Policy Statement on Nuclear Power Plant Standardization, dated September 15, 1987
 - b. Draft Federal Register Notice of Proposed Rulemaking, undated (70 pages)
2. Subsequently, a revised draft Federal Register Notice, reflecting CRGR comments and recommendations on two related Advanced Reactor Commission papers (and coordination efforts by the EDO office), was transmitted by memorandum dated June 7, 1988, W. C. Parler to E. L. Jordan; the revised draft Federal Register Notice was broken into two separate parts, as follows:
 - a. Supplementary Information Section, undated (33 pages)
 - b. Draft Rule and Backfit Analysis Section, undated (39 pages)

CONCLUSIONS/RECOMMENDATIONS

As a result of their review of this matter, including the discussions at this meeting and earlier related discussions at Meeting Nos. 135 and 136, the Committee recommended that the proposed draft rule be issued for comment, subject to the following modifications:

1. At p. 21 of the draft rule, under Section 52.45(a), change the wording to read:

"Any person who holds or has applied for a final design approval..."

2. At p. 21 of the draft rule, under Section 52.45(c), replace the word "isolated" with the term "appropriately sited".

3. At p. 22 of the draft rule, under Section 52.45(d):

- a. Change the wording to read:

"Designs shall be complete in scope. Only site-specific elements, such as...heat sink, may be excluded from the scope of the design. (Excluded site specific elements that can affect safe operation must be addressed in the specification of the site envelope or interface requirements.)"

- b. Also, delete the phrase "...essential to the safe operation of the plant" at the end of the second sentence there; and substitute the following:

"...components that can affect the safe operation of the plant but are not fixed by site specific considerations or parameters."

4. At pp. 22-23 of the draft rule, under Section 52.47:

- a. Change the second sentence of the opening paragraph to read as follows:

"The information submitted for a design certification must include performance requirements and specifications sufficient to permit the drawing up of procurement specifications."

- b. At the top of p. 23 of the draft rule, under Section 52.47, to avoid confusion regarding intent, delete the word "unconditional" in the third line, and modify the wording of that sentence to convey the same thought but also take into account the fact that certification of a standard design will necessarily include "conditions" (e.g., in the specification of interface requirements).

5. At p. 29 of the draft rule, under Section 52.62(a), modify the wording of that entire subsection to more clearly convey the intent that (a) during the initial or renewal periods in which a design certification is in effect, no changes will be imposed by the Commission except changes needed to comply with regulations in effect at the time of certification approval/

renewal, or to provide adequate safety; but (b) in the rulemaking for renewal of certification, changes that substantially improve safety in a cost beneficial manner can only be imposed prospectively.

6. Make clearer in the treatment of mechanisms for public participation in the regulatory process for certified designs (e.g., at pp. 19-20 of the Supplementary Information package) the important distinction between (a) the rulemaking proceedings for initial approval or renewal of certification, and (b) the rulemaking proceedings for amendment of a certified design, i.e., the former includes provision for petitioners to request informal hearings as a preliminary step, but the latter does not. This should be very clear because it may be a principal area of public comment.
7. At p. 13 of the draft rule, under Section 52.17(c), modify the wording to read as follows:

"The application must show, and the Commission must make a finding, that the area surrounding...at the site."

The rule should be modified, wherever necessary, to assure, to the extent practical, that emergency planning issues are resolved at the initial hearing, i.e., at an early site or combined hearing.

8. Throughout the draft Part 52 package, delete the term "...structures, systems, and components that are essential to the safe operation of the plant..." and substitute other wording that is not so likely to be misunderstood by applicants as synonymous with the current safety classification term "safety-related." The phrase "...structures, systems, and components that can significantly affect safe operation of the facility..." (or something similar and equivalent) would be satisfactory and less likely to result in confusion on this important point.
9. At p. 22 of the Supplement Information package, delete the third sentence on that page.
10. At pp. 29-30 of the Supplementary Information package, under Question 7, add the following:

"Should the standards for obtaining exemptions for a certified design be stricter to avoid continual regression from true standardization?"
11. The Committee understands from discussions with staff at this meeting that the proposed rule is intended to apply to existing as well as advanced designs, e.g., to the ALWRs and to (applicants who hold or have applied for) final design approvals for existing designs. The wording at p. 14 of the Supplementary Information, however, package states (in a way that suggests exclusiveness) that the rule applies to "...procedural aspects of the certification of advanced reactor designs..." Clarify the intended scope of the rule, perhaps by deleting this wording.

The recommendations in the preceding for the most part are focused on changes in the wording of just a specific section of the total package submitted for review. It is intended that the staff should carefully review, and make conforming changes to, other parts of the package as appropriate for consistency throughout.

PART 52 IN A NUTSHELL
(Sections changed from 4/19 draft are marked "*")

EARLY SITE PERMITS

Applicant is anyone who may apply for CP (15)

Contents of application (17)

Types of facilities suitable to site

Projected population profile

* Redress plan

Good faith efforts to get local cooperation on emergency planning

* Fees (19)

No application fee

Review fees paid by permittee but deferred

Hearings are mandatory, and adjudicatory (21)

ACRS (23) reviews any safety issues

LWA-1 activities ok without separate authority (25)

Duration of permit is 10 years (27)

Renewals (29-33)

5-10 years

Unlimited number

Granted if application meets current regulations

Hearing opportunity

ACRS review

Permit remains valid during renewal proceeding

or if cited in CP application before expiration

Use of site for other purposes ok, with NRR review (35)

* Finality (39)

If permit in effect, backfits only for undue risk
CP/OL applicant may request variance under 50.92

DESIGN CERTIFICATIONS

Applicant is any person (45)

Advanced reactors can be certified (45)

Prototpye test is presumed

Presumption can be overcome

Incomplete designs can be certified (45)

If everything "essential to safety" is in design

Contents of applications (47)

Level of detail

* FDA level

* Enough to draw up procurement specs, etc.

Enough so DC can be unconditional

Technical information

* Required by applicable portions of
Parts 20, 50, 73, & 100

Staff will advise applicant on what is needed

Site parameters

PRA

Proposed tests, analyses, inspections, etc.

* Modular design information

Options for configuration

PRA should take account of options

* Interface requirements with uncertified BOP, with
Showing of verifiability of requirements
Representative design for BOP

Fees (49)

* No application fee

Review fees paid by holder but deferred

Certification proceeding (51)

Rulemaking

Notice and Comment

* Informal hearing before ASLB

* ACRS need not consider issues it reviewed earlier (53)

Duration of certification is 10 years (55)

Renewals (57-61)

5-10 years

Unlimited number

* Granted if application meets current regulations

Proceeding is rulemaking with informal hearing

DC remains valid during renewal proceeding

or if cited in CP application before expiration

Finality (63)

* If DC in effect, backfits only for undue risk

Holder may apply for amendment to design

Granted if it complies with regulations

* Backfitted if adequate protection requires

Applicant or licensee may request 50.12 exemption

* Backfitted if adequate protection requires

* Licensee may make plant changes without prior NRC
approval if change is outside design

COMBINED CP AND CONDITIONAL OL

Applicant is anyone who may apply for CP (75)

Fees are those for CP/OLs in Part 170 (75)

Contents of Applications -- Technical information (79)

As for DCs,

- * If cites DC and ESP, show them compatible
Tech specs
Emergency plans and
good faith efforts to get local cooperation

Hearings are mandatory and adjudicatory (85)

- * ACRS need not consider issues it reviewed earlier (87)

LWA-1 activities ok without separate authority (91)

If early site permit cited

- * Redress required in application denied
and site permit expires without being cited

Exemptions & variances (93)

Applicant may seek 50.12 exemption from DC

Applicant may seek variance from permit

Conversion to full operating license (103)

- * Each module the subject of a separate conversion
Opportunity for hearing on grounds of
Nonconformance of construction with DC, etc.

- * Some change necessary for adequate protection

Enclosure 2 to the Minutes of CRGR Meeting No. 135
DOE Sponsored Advanced Reactor Designs - Key Licensing Issues
April 27, 1988

TOPIC

The Committee continued at this meeting their review of the proposed Commission Paper, "Key Licensing Issues Associated With DOE Sponsored Advanced Reactor Designs" which was begun at Meeting No. 133 - (see Minutes dated 5/6/88). W. Morris (RES) and T. King (RES) were the principal staff representatives presenting and discussing at this meeting the proposed design criteria for, and approach to the staff's review and certification of, three advanced reactor designs that are being sponsored by DOE. Attachment 1 to this enclosure is a copy of a briefing slide used by the staff at this meeting to clarify the relationship between Advanced Reactor Certification and Standardization issues (as reflected in the two draft Commission Papers submitted by RES for CRGR review), and the draft rulemaking package (Part 52) submitted to CRGR for review recently by OGC.

BACKGROUND

In addition to the documents submitted initially by RES for CRGR review in this matter (see listing of those documents in Minutes of CRGR Meeting No. 133), the Committee was provided the following supplemental information subsequent to Meeting No. 133:

Memorandum dated April 21, 1988, J. H. Conran to E. L. Jordan et al., with attachments as follows:

1. Comments by Individual CRGR Member (Ross), undated, "Major Points to Make on Commission Paper on Advanced Reactors."
2. Note dated April 12, 1988, S. Treby to T. King, subject: "SECY Paper on Key Licensing Issues Associated with DOE-Sponsored Advanced Reactor Designs."
3. Revised Pages (pp. 8, 9, 16, 17, & 18) for the Draft (Key Licensing Issues) Commission Paper, dated February 9, 1988, that was submitted initially by RES for CRGR review in this matter.

(The documents listed above are included as a part of these Minutes - see Attachment 2 to this Enclosure.)

CONCLUSIONS/RECOMMENDATIONS

As a result of their review of this matter, including the discussions with the staff at Meeting Nos. 133 and 135, the Committee recommended in favor of sending the proposed "Key Licensing Issues" Commission Paper forward for EDO and Commission consideration, subject to the following comments and modifications:

1. The Committee strongly believes that, as a principal policy objective, NRC should require that advanced reactor designs provide an improved level of safety compared to currently operating LWRs, at least with respect to the degree of confidence in the level of safety achieved.
2. The Committee believes that the proposed approach to advanced reactor design certification and the preliminary design criteria set forth in the Draft Commission Paper provide an acceptable basis for approving the construction and testing of prototypes of the advanced reactor designs involved. Information, experience, and test results obtained in the construction and testing of prototypes should be factored into the development of the final design criteria and guidance that will serve as the basis for certification of advanced designs. As a specific consideration, the Commission should address explicitly the timely development of appropriate codes and standards to support design, construction and review of the advanced designs.
3. The Committee noted that the proposed advanced reactor designs appear to involve significant safeguards issues, because their fuel designs employ plutonium or uranium more highly enriched than in current LWR designs; but these are not addressed in the draft Commission Paper. The Committee was informed that the staff intends to address these issues separately and later in the process. Notwithstanding such future plans, the Committee recommended that the draft ("Key Issues") Commission Paper be revised to include identification, and at least some discussion, of the significant safeguards issues associated with the use of plutonium and the more highly enriched uranium.
4. The Committee recommended, and the staff agreed to make, a number of revisions to the wording of the proposed Commission Paper in the specific areas indicated in the following:

a. Page 2, middle of page:

The staff should revise the paper with regard to use of the term "current generation LWRs", in this section and throughout the paper. That term should not be applied to "paper" reactor designs that have not yet been built. Also, usage of that term in this draft Commission Paper does not appear consistent with its usage in the related (Part 52) rulemaking package provided by OGC (e.g., see under definition of "Advanced reactor," at pp. 40-41 of the OGC paper).

b. Pages 2 & 3, under "General Criteria":

The wording of this section is too vague or ambiguous; it should be revised/clarified along the following lines:

- i. "...existing rules and regulations, as interpreted for advanced reactor concepts..."

(This is simply too vague to understand for review purposes, as written. Revise this section here, and wherever else these or

similar words appear, to reflect the explanation to the Committee at the meeting, i.e., that the designers will propose, and the staff will review and determine finally, which parts of the existing rules, SRPs, and other guidance are applicable.)

- ii. "... fission product retention capability at least equivalent to LWRs..."

(Indicate more clearly what is intended here, e.g., retention in the fuel, in the reactor, in the containment, etc., and how this is to be measured/evaluated for review purposes.)

- iii. "... defense in depth..."

(The intended meaning of this term appears to be different in the advanced design context than is commonly understood for current LWR designs. Discuss/explain these differences and their safety implications, e.g., is this a less (or more) stringent criterion for the advanced designs than for existing LWR designs with regard to number of barriers and overall effect on safety.)

- iv. "... demonstrate enhanced safety/margin via testing..."

(Indicate more clearly how this will be done, e.g., which systems or features will need to be tested for certification of an advanced design, and how that will be determined. Note Item 4.e. below in this context.)

- v. "Advanced reactor designers should ensure..."

(Use of the terms "shall" or "must" is more appropriate for specifying design criteria, i.e., design requirements. "Should" is used in connection with non-mandatory guidance.)

The draft paper should be reviewed carefully throughout for consistency in the use of terminologies, and further revised as necessary, in accordance with the preceding.)

- c. Page 3, under "Specific Criteria:

Change the term "release limits" to "dose limits," and revise to delete the term "ad hoc" in discussions of Emergency Planning (here and throughout the paper). Clarify what is intended with regard to Emergency Planning for advanced designs, in accordance with the discussion with the Committee in this meeting (e.g., same onsite planning as for current plants, prompt offsite planning reduced, no drills/procedures required, etc., similar to fuel cycle facilities). RES agreed to work with OGC in revising this section, and the more detailed discussion of EP matters in Section II.B.4 (at pp. 19-21 of the draft Commission Paper).

- d. Page 10, under Subsection iv, first bullet:

Clarify what is intended by the term "shutdown" for the advanced reactor designs involved, in accordance with the discussions at this meeting (e.g., one cold shutdown mechanism/system independent of offsite power; one system/mechanism capable of holding the reactor safely at hot shutdown for "X" hours/days/weeks).

- e. Page 10, under Subsection II.A.2.v and Page 11, under Subsection II.A.2.iii:

Revise wording to specify that the results of the PRA should be used in determining what tests are to be performed for certification.

- f. Page 11, under second indented paragraph:

Clarify the wording of this section with regard to QA requirements for advanced designs. For example, as indicated to the Committee at this meeting, the QA required for inherent/enhanced safety features may be even more stringent than existing Appendix B, certainly not less stringent as was suggested to some by the existing wording).

- g. Pages 13-14, under "Event Categories III & IV:

The staff should specifically call to the Commission's attention, and get explicit Commission agreement on, the proposed requirement that the advanced reactors be designed for very severe accidents, clearly beyond what are currently recognized as the Design Basis Events. Also, there should also be explicit acknowledgement of, and appropriate cautionary guidance regarding, the large uncertainties associated with event frequencies as low as E-6 and E-7, as referred to in this section.

5. The changes recommended above should be coordinated with the CRGR staff. In addition, RES should obtain NRR concurrence on the revised package. If this results in further substantive modifications to the package, it should be resubmitted for review by the Committee.

Enclosure 2 to the Minutes of CRGR Meeting No. 136
Standardization of DOE-Sponsored Advanced Reactor Designs
May 19, 1988

TOPIC

The Committee continued at this meeting their review of the proposed Commission Paper, "Standardization of Advanced Reactor Designs," begun at Meeting No. 133 - (see Minutes dated May 6, 1988). W. Morris (RES) and J. Wilson (RES) were the principal staff representatives at this meeting who presented the staff's proposed plans for review of three DOE-sponsored advanced reactor designs and the proposed (preliminary) design criteria that those advanced designs will be reviewed against. Copies of the briefing slides used by the staff at this meeting are enclosed - (see Attachment 1 to this Enclosure).

BACKGROUND

In addition to the documents submitted initially by RES for CRGR review in this matter (see listing in Minutes of CRGR Meeting No. 133), the Committee was provided supplemental information by the staff subsequent to Meeting No. 133, as follows:

1. Revised (draft) Commission Paper, dated May 10, 1988
[See enclosed - Attachment 2 to this Enclosure]
2. Memorandum dated May 19, 1988, S. A. Treby to E. L. Jordan, "Standardization of Advanced Reactor Designs"
[See enclosed - Attachment 3 to this Enclosure]

CONCLUSIONS/RECOMMENDATIONS

As a result of their review of this matter, including the discussions with the staff at Meetings 133 and 136, the Committee recommended in favor of sending the proposed (Standardization of Advanced Reactor Designs) Commission Paper forward for EDO and Commission consideration, subject to the following caveats:

1. The scope of the staff's review should be an entire prototypical advanced reactor plant (not just the safety-related envelope); and the staff should require a level of detail sufficient to do a complete review of both balance-of-plant and safety-related systems, and to understand fully any interactions between them.
2. The staff should require prototype testing at an isolated site (i.e., not a site that could be approved in accordance with Reg. Guide 1.47). The test configuration should be closely representative of a whole plant (e.g., a single module with a heat sink other than a turbine should not be considered acceptable). The purpose of this prototype testing would be to demonstrate the inherent/enhanced safety features of the advanced design,

and to verify the intended absence of interactions between safety equipment and other plant equipment/systems. The results of the prototype testing should be used to determine the scope of certification of the final standard design; and this would be addressed in the SER accepting the advanced design for certification.

Enclosure 3 to the Minutes of CRGR Meeting No. 137
Proposed Bulletin on Thermal Stresses in Piping
June 3, 1988

TOPIC

C. Rossi (MRR) and C. Berlinger (NRR) presented for CRGR review a proposed NRC Bulletin requesting that licensees (1) review their reactor coolant systems (RCS) to identify any connected, unisolable piping that could be subjected to temperature distributions that would result in unacceptable thermal stresses, and (2) take action, where such piping is identified, to ensure that the piping will not be subjected to unacceptable thermal stresses. Copies of the briefing slides used by the staff to guide their presentation and their discussions with the Committee on the proposed bulletin at this meeting are enclosed (see attachment to this enclosure).

BACKGROUND

The documents submitted for review by CRGR in this matter were transmitted by memorandum dated May 16, 1988, J. H. Sniezek to E. L. Jordan; the review package included the following:

1. Enclosure 1 - Draft NRC Bulletin, undated, "Thermal Stresses in Piping Connected to Reactor Coolant Systems," and attachments as follows:
 - a. Figure 1 - "Farley 2 Temperature Data"
 - b. Figure 2 - "Farley ECCS"
2. Enclosure 2 - Information Required by Section IV.B of the CRGR Charter for Review of the Proposed Bulletin

CONCLUSIONS/RECOMMENDATIONS

As a result of their review of the proposed bulletin, including the discussions with the sponsoring office staff in this meeting, the Committee recommended in favor of issuing the proposed bulletin, subject to the following minor revisions (to be coordinated with the CRGR staff):

1. At p. 2 of the proposed bulletin, in the first full paragraph, change the wording of the second sentence to read as follows:

"Because valves often leak, an unanalyzed condition may exist for those reactors that can be subjected to this unanticipated phenomenon."
2. At p. 2 of the proposed bulletin, in the first full paragraph, preface the last sentence in that paragraph with the following phrase:

"Although failure is unlikely to occur..."

Then reexamine the remaining wording of that sentence (referring to double-ended failure), in comparison to the wording of the response to Question (viii) on p. 6 of Background Item 2 (referring to small-break LOCA), and revise as necessary for consistency.

3. At p. 2 of the proposed bulletin, under Action No. 2, delete the words "...safety injection..." in the first line of that paragraph.
4. At p. 2 of the proposed bulletin, under Action No. 2, add a sentence as follows:

"If affected welds are found in the unisolable section being examined, extend the examination to other likely affected portions of that section (e.g., to any adjacent elbows).

THERMAL STRESSES IN PIPING CONNECTED TO REACTOR COOLANT SYSTEM

BACKGROUND:

FARLEY UNIT 2 EVENT (12/9/87)

- THERMAL FATIGUE FAILURE OF UNISOLABLE PIPING CONNECTED TO RCS.

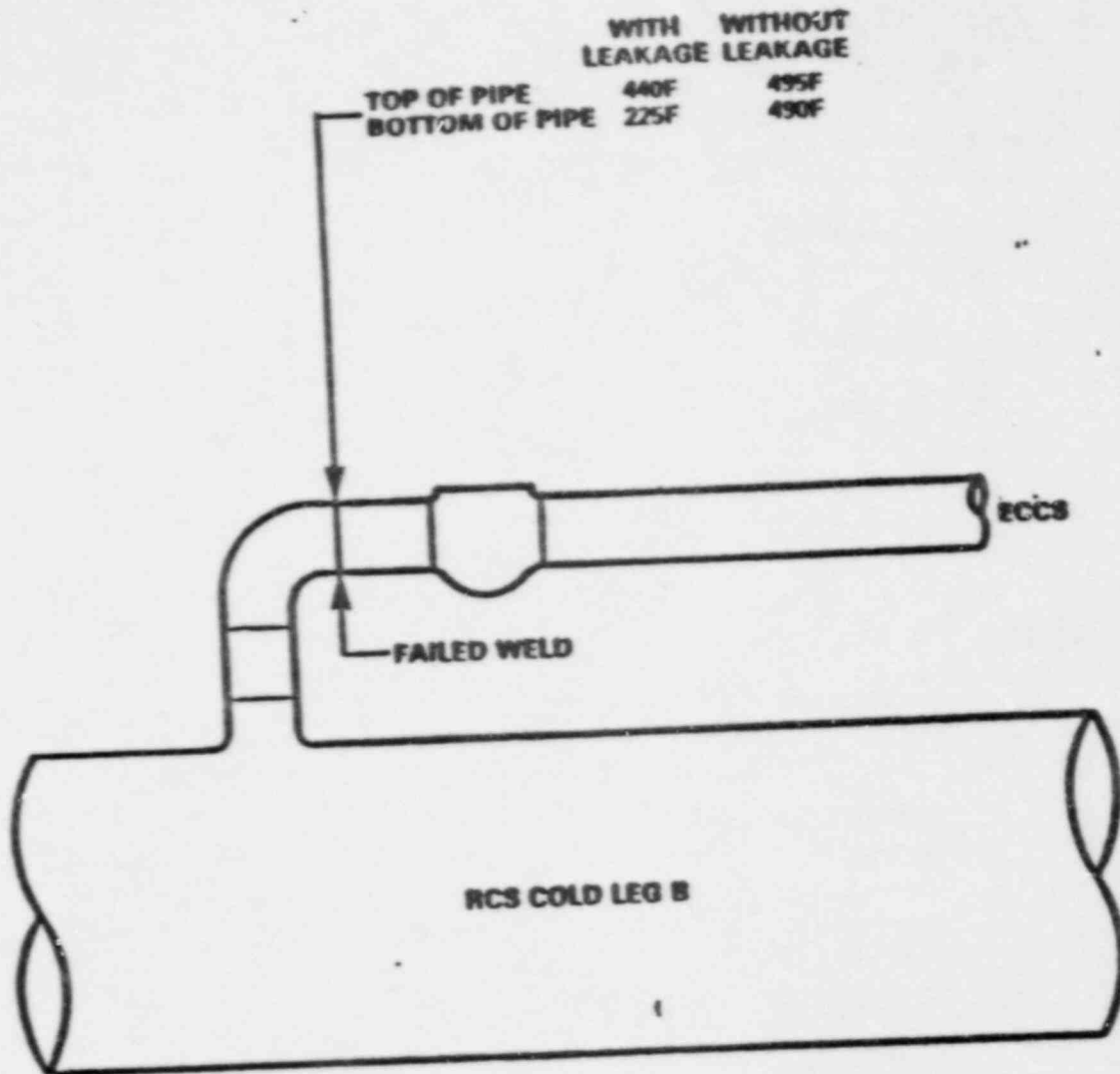
BULLETIN REQUESTED ACTIONS:

1. REVIEW PIPING SYSTEMS CONNECTED TO RCS - UNISOLABLE AND POSSIBLY SUBJECTED TO UNANALYZED THERMAL STRESSES.
2. FOR SUCH PIPING - EXAMINE NONDESTRUCTIVELY WELDS AND HEAT AFFECTED ZONES.
3. PLAN/IMPLEMENT CONTINUING PROGRAMS TO:
 - REDESIGN/MODIFY PIPING TO RESIST CYCLIC THERMAL STRESSES.
 - INSTALL T/C TO MONITOR TEMPERATURE AND MAINTAIN WITHIN ACCEPTABLE TEMPERATURE DISTRIBUTION.
 - MONITOR PRESSURE UPSTREAM OF BLOCK VALVES AND KEEP BELOW RCS PRESSURE.

SCHEDULE:

- OPERATING PLANTS NOT IN EXTENDED OUTAGE:
 - ACTION 1: 60 DAYS
 - ACTION 2/3: BEFORE END OF NEXT REFUELING IF RESTART SCHEDULED FOR > 90 DAYS, OR BEFORE RESTART FROM NEXT REFUELING IF CURRENT STARTUP SCHEDULED WITHIN 90 DAYS.
- OPERATING PLANTS IN EXTENDED OUTAGE AND CP HOLDERS:
 - ACTION 1: LATER OF 60 DAYS OR INITIAL CRITICALITY
 - ACTION 2/3: BEFORE CRITICALITY IF CRITICALITY SCHEDULED FOR > 90 DAYS, OR BEFORE RESTART FROM NEXT REFUELING IF CURRENT STARTUP SCHEDULED WITHIN 90 DAYS.

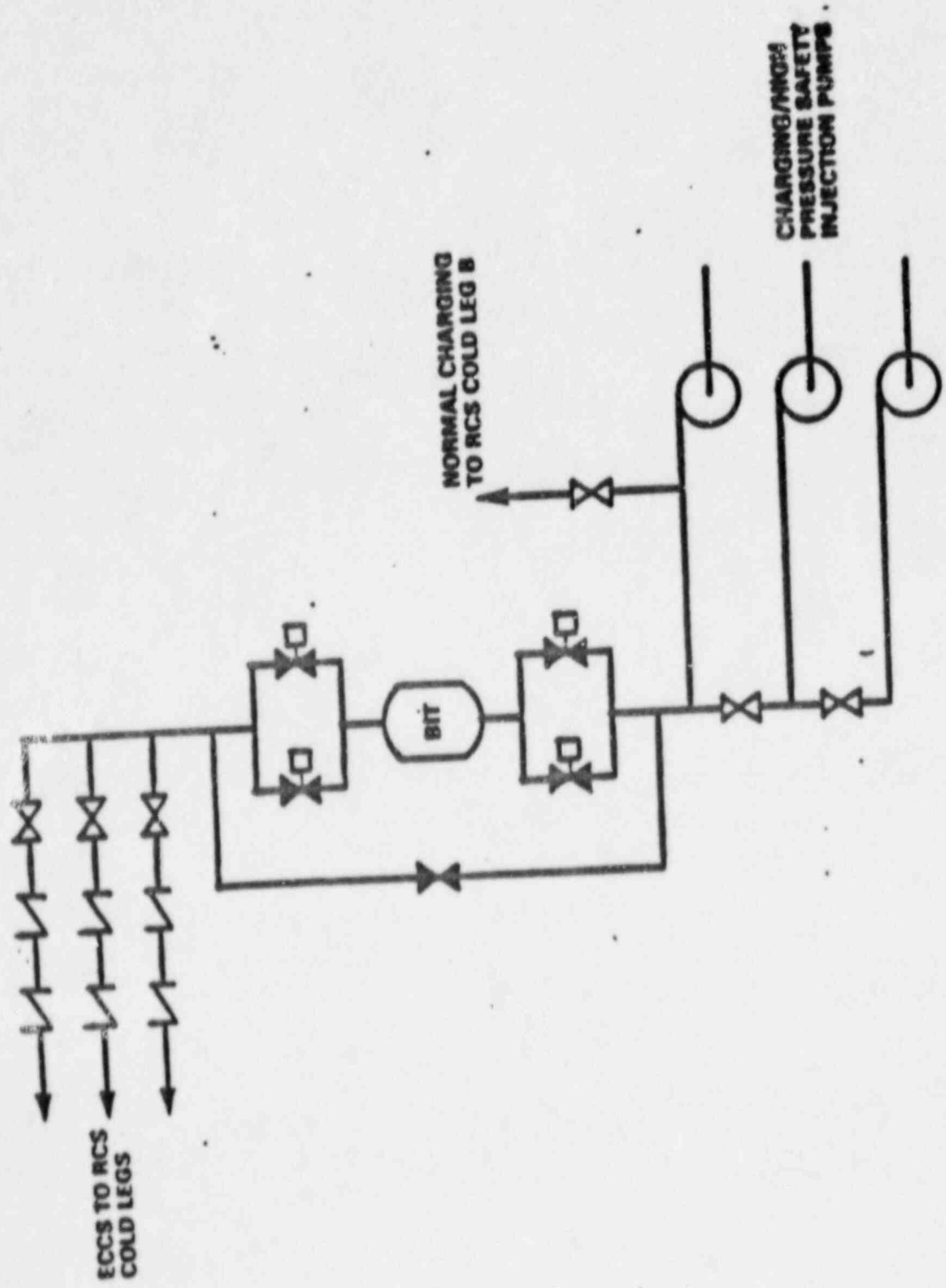
REPORTING REQUIREMENTS - CONFIRMATORY LETTERS - WITHIN 30 DAYS OF COMPLETION OF ACTION 1 AND ACTIONS 2/3.



FARLEY 2 TEMPERATURE DATA

FIGURE 1

FIGURE 2



FARLEY 2 ECCS

Enclosure 4 to the Minutes of CRGR Meeting No. 137
Proposed SER for B&W Owners Group's Response to the ATWS Rule
June 8, 1988

TOPIC

A. Thadani (NRR) and V. Thomas (NRR) briefed CRGR on the proposed Safety Evaluation (SER) for generic report BAW 47-115091-00, the B&W Owners Group's (BWO's) response to the ATWS Rule (10 CFR 50.62). The proposed SER accepts the BWO's response, subject to implementation of certain contended recommendations that will require modification of the affected plants. The issue to be determined in the discussion with the staff of this matter was whether the recommended modifications involved new or previously-approved staff positions, and therefore whether or not this proposed SER required CRGR review prior to issuance. Copies of the briefing slides used by the staff to guide their presentation and their discussion with the Committee at this meeting are enclosed (see attachment to this enclosure).

BACKGROUND

1. The material provided initially for CRGR consideration in connection with this item was transmitted by memorandum dated May 9, 1988, J. H. Sniezek to E. L. Jordan; that package included the following:
 - a. Draft Letter (undated), J. A. Calvo to Multiple Intended Addressees), subject: "NRC Evaluation of BWO's Generic Report - Design Requirements for DSS and AMSAC."
 - b. Safety Evaluation, dated February 1988, of Topical Report (B&W Document 47-115091-00), "Design Requirements for DSS (Diverse Scram System) and AMSAC (ATWS Mitigation System Actuation Circuitry).
2. Subsequently, at the request of the CRGR staff, the staff provided supplemental documents for consideration by the Committee, as follows:
 - a. Letter dated October 9, 1985, J. T. Enos to H. L. Thompson, subject: "B&W Owners Group ATWS Design Basis," and attachment entitled:

"Design Requirements for DSS (Diverse Scram System) and AMSAC (ATWS Mitigation System Actuation Circuitry)," dated September 1985.
 - b. Letter dated December 1, 1987, J. T. Enos to F. J. Miraglia, subject: "BWO's Response to ATWS SER Items," and attached specific responses (nine pages)

CONCLUSIONS/RECOMMENDATIONS

As a result of their discussions with the staff at this meeting, the Committee agreed that the subject proposed SER is based only on previously-approved positions and legal requirements in the ATWS rule. Accordingly, this item does not require formal review by CRGR prior to issuance by the NRC staff.

BRIEF
ATWS HISTORY OUTLINE
B&W

- o THREE PROPOSED ATWS RULES DEVELOPED
(STAFF RULE/HENDRIE RULE/UTILITY RULE)
1981

- o PUBLIC COMMENT ON PROPOSED ATWS RULES
JUNE 1982

- o STEERING GROUP FORMED TO DEVELOP FINAL RULE
JULY 1982

- o SALEM - EVENT (FEB, 1983)

oo RESULT: NUREG-1000, VOL. 1 - 1983
GL 83-28 (NUREG-1000, VOL. 2 - AUG. 1983)

- o SECY-83-293 (JULY 1983)

- o COMMISSION VOTE

- o FINAL RULE - NOV, 1983
10 CFR 50.62 - JUNE 1984

B&WOG

- o B&W DOCUMENT - GENERIC REPORT
(DSS/AMSAC DESIGN REQUIREMENTS)
OCTOBER 1985

- o MEETING: BWOOG/NRC STAFF
DRAFT SER/B&WOG GENERIC REPORT
OCTOBER 1987

- o BWOOG SUPPLEMENTAL LETTER
RESPONSES TO OPEN ITEMS
DECEMBER 1987

- o SER/IN HOUSE REVIEW
CURRENT

OPEN ITEMS
(DISCUSSION)

o NO FORESEEABLE PROBLEMS WITH THE IDENTIFIED AREAS OF CONCERN TO THE STAFF WITH ONE EXCEPTION:

o SAFETY-RELATED (IE) POWER SUPPLY -

NOT REQUIRED, BUT MUST BE CAPABLE OF PERFORMING SAFETY FUNCTIONS WITH LOSS OF OFFSITE POWER. LOGIC POWER MUST BE FROM AN INSTRUMENT POWER SUPPLY INDEPENDENT FROM THE POWER SUPPLIES FOR THE EXISTING REACTOR TRIP SYSTEM. EXISTING RTS SENSOR AND INSTRUMENT CHANNEL POWER SUPPLIES MAY BE USED PROVIDED THE POSSIBILITY OF COMMON MODE FAILURE IS PREVENTED.

oo DESIGN REQUIREMENTS FOR THE USE OF POWER SUPPLIES AS DESCRIBED IN THE BWOG GENERIC DOCUMENT AND SUPPLEMENTAL LETTER 12/87 IS NOT ACCEPTABLE TO THE STAFF.

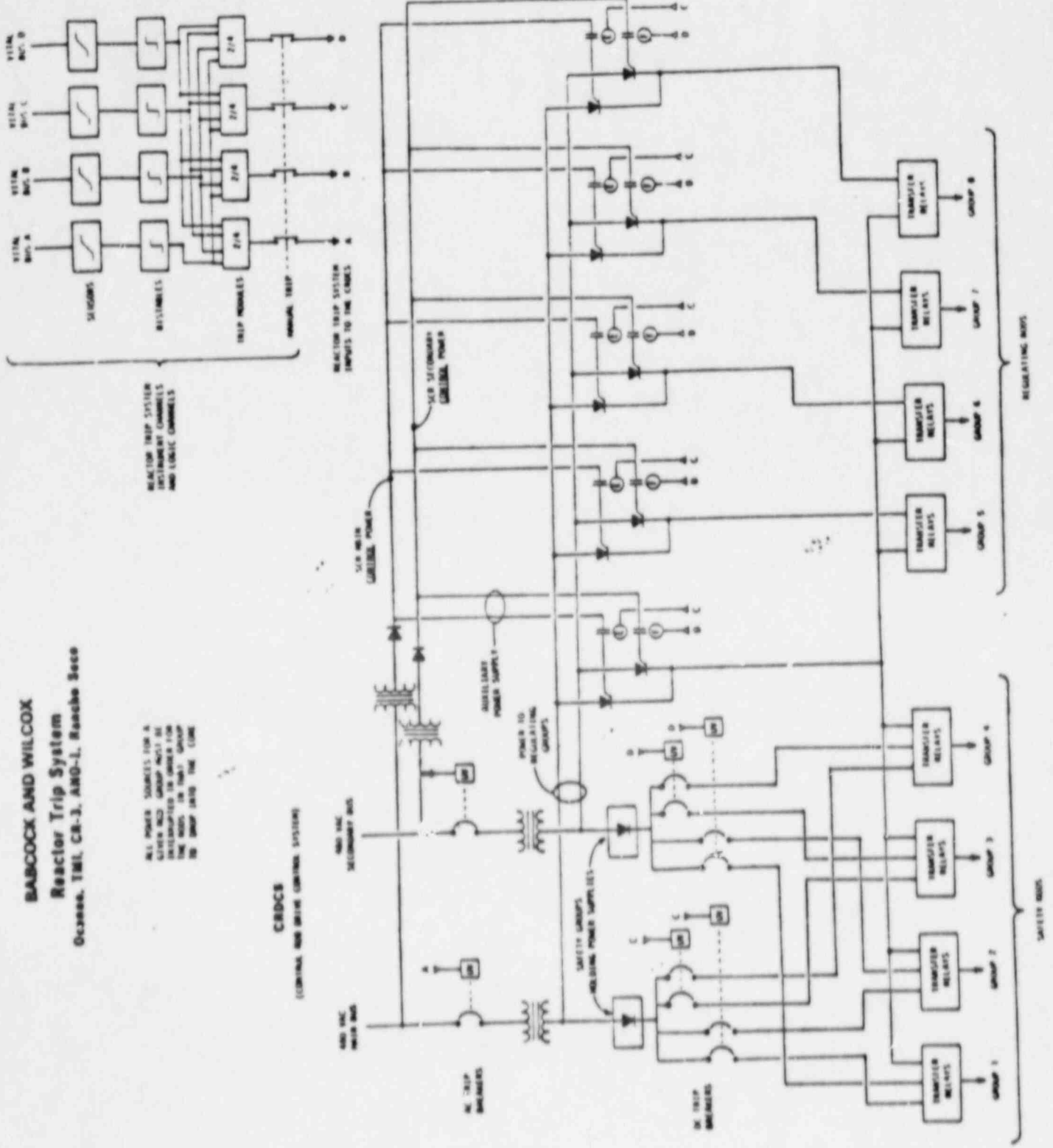
oo AN ACCEPTABLE METHOD IS PRESENTED IN SECTION 5.6 OF THE SER.

CONCLUSIONS

- o IF INDEPENDENT SEPARATE POWER SUPPLIES ARE USED, GENERIC APPROVAL CAN BE GRANTED
- o OTHERWISE, ISSUE BECOMES PLANT SPECIFIC AND WILL BE REVIEWED AS SUCH
- o OGC AGREES WITH THE STAFF'S POSITION CONCERNING INTERPRETATION OF POWER SUPPLIES

BABCOCK AND WILCOX
Reactor Trip System
Oceana, TML CB-3, ANO-1, Rancho Seco

ALL POWER SOURCES FOR A
SYSTEM AND GROUP AND ALL
INDICATORS FOR INDICATORS FOR
THE GROUP IN THAT GROUP
BE TRIP INTO THE LINE



CRDCS
(CONTROLLING AND REGULATING SYSTEMS)

AND 138V
SECONDARY BUS

AND 138V
SECONDARY BUS

M. TRIP
BREAKERS

D. TRIP
BREAKERS

SAFETY BUS

REGULATING BUS