UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

July 20, 1995

MEMORANDUM TO: James M. Taylor
Executive Director for Operations

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

SUBJECT: MINUTES OF CRGR MEETING NUMBER 269

The Committee to Review Generic Requirements (CRGR) met on Tuesday, February 14, 1995 from 8:00 a.m. to 11:45 a.m. A list of attendees at the meeting is attached (Attachment 1). The following items were discussed at the meeting:

1. The CRGR discussed with the Director, NMSS the projected review by CRGR of selected items in the nuclear materials area on a trial basis during the next year (ref: SRM SECY-94-109). This matter is discussed in Attachment 2.

2. The CRGR reviewed the proposed final Regulatory Guide, DG-1023, "Evaluation of Pressure Vessels with Charpy Upper-Shelf Energy Less Than 50 Ft-Lb". The Committee recommended in favor of issuing the proposed guide as effective for use by licensees on a voluntary basis, with only minor comments. This matter is discussed in Attachment 3.

3. The CRGR discussed proposed amendments to the CRGR Charter, and recommended in favor of resubmitting the December 1993 proposed revision, updated to include expansion of the scope of CRGR activities, on a trial basis, to include review of selected items in the nuclear materials area. This matter is discussed in Attachment 4.

In accordance with the EDO's July 18, 1983 directive concerning "Feedback and Closure of CRGR Review", a written response is required from the cognizant office to report agreement or disagreement with the CRGR recommendations in these minutes. The response is to be forwarded to the CRGR Chairman and if there is disagreement with the CRGR recommendations, to the EDO for decision making.

Questions concerning these meeting minutes should be referred to J. Conran (415-6839) or R. Tripathi (415-7584).

Attachments:
As stated

cc: See next page

R002

LIST OF ATTENDEES

CRGR MEETING NO. 269

February 14, 1995

CRGR Members

E. Jordan
F. Miraglia
J. Murphy
M. Knapp
J. Rutberg
E. Merschoff

NRC Staff

L. Shao
M. Mayfield
S. Malik
M. Taylor
R. Bernero
C. Paperiello
B. Elliot
N. Dudley

CRGR Staff

J. Conran
R. Tripathi
D. Ross (part time)

Attachment 2 to the Minutes of the CRGR Meeting No. 269

Proposed Expanded Scope of CRGR Review to Include Nuclear Materials Issues

February 14, 1995

TOPIC

The CRGR discussed with R. Bernero, Director, NMSS the possible expansion of CRGR review scope to include proposed new requirements in the nuclear materials area. NMSS proposed that the CRGR review of materials items be limited to selected nuclear materials items on a trial basis. This discussion was in response to the June 15, 1994 Commission directive (Background Item 2 below) that the staff consider expanding the scope of the CRGR review to include proposed requirements in the nuclear materials area. (This topic was also discussed previously by the Committee at Meeting No. 259.)

BACKGROUND

1. Commission Paper (SECY-94-109), dated April 21, 1994, "Scope of Review for the Committee to Review Generic Requirements (CRGR)"

2. SRM (SECY-94-109), dated June 15, 1994, "Scope of Review for the Committee to Review Generic Requirements (CRGR)"

3. Enclosure 4 to the Minutes of CRGR Meeting No. 259, dated August 3, 1994

CONCLUSIONS\RECOMMENDATIONS

R. Bernero, Director, NMSS identified several nuclear materials areas that might benefit from CRGR review; selected topics for future CRGR consideration discussed with the Committee included the following:

1. Dry cask storage of spent fuel - Items such as certification of multi-purpose (storage as well as transportation) canister systems through rulemaking.

2. 40 vs 100 year licensing of monitored retrievable storage sites east of Yucca Mountain (proposed legislation is currently pending before Congress).

3. Interim on-site low-level waste storage issues - Currently there are no generic requirements for on-site storage of low-level waste. A joint NRR-NMSS generic letter on the subject, addressing concerns related to potentially flammable and\or dispersible waste forms, is currently being considered.

4. Radiation\chemical safety\hazards considerations and criticality issues related to the low-enrichment-uranium (LEU) fuel fabrication facilities. The planned revision of 10 CFR Part 70 was identified as a likely topic for CRGR review in this context.

5. NMSS indicated that the Committee's perspective and advice on structural, electrical, and mechanical aspects of the regulation of spent fuel and waste storage/transportation operations, and LEU fuel fabrication facilities (from the systems, rather than process, perspective) could be helpful.

6. With regard to proposed new requirements that are risk\performance-based, the Committee can provide a useful independent assessment of under-regulation or over-regulation in the nuclear materials area. For example, in the NRC-regulated states, if the implementation of alarming rate meters (under current 10 CFR 34 requirements) is shown to result in fewer radiographer over-exposure events, that finding may reduce the value of, and thus eliminate the need for, the proposed two-man rule and certification provisions in the proposed Part 34 revision under consideration.

The Committee agreed that the selected nuclear materials areas proposed by NMSS are appropriate topics for CRGR review, on a trial basis. The CRGR Charter revision, now under preparation, will be modified to reflect this proposed change in CRGR review scope. After a trial period of about one year, the Committee will examine the experience from CRGR reviews of nuclear materials items. Specifically, the Committee will assess the value added by CRGR reviews, and based on that assessment will make appropriate recommendations to the EDO regarding whether or not the Committee should continue review of nuclear materials items. The Committee's assessment of whether or not the items that were identified by the staff for CRGR review actually warranted CRGR attention and, if so, whether there was significant value added by the Committee's review, will be included in the CRGR meeting minutes during the trial period, and will also be reported to the EDO in the CRGR Weekly Items of Interest to be reported to the Commission.

Attachment 3 to the Minutes of the CRGR Meeting No. 269
Proposed Final regulatory Guide - DG-1023
"Evaluation of Reactor Pressure Vessels with
Charpy Upper-Shelf Energy Less Than 50 ft-lb"

February 14, 1995

TOPIC

L. Shao (RES), S. Malik (RES), and M. Mayfield (RES) presented for CRGR review the proposed final Regulatory Guide, DG-1023, "Evaluation of Pressure Vessels with Charpy Upper-Shelf Energy Less Than 50 Ft-Lb". The proposed new guidance, which is intended for voluntary use by licensees, provides (a) acceptance criteria, (b) methods of analysis, (c) methods for determining appropriate materials properties, and (d) guidelines for selecting the limiting loading transients, that are acceptable to the NRC staff, for use by licensees in demonstrating that values of upper-shelf energy less than 50 ft-lbs will provide adequate margins of safety against fracture in reactor vessels. The draft Guide was considered previously by the Committee at CRGR Meeting No. 245 and was published in September 1993 for public comments. The staff's evaluation of comments is reflected in the draft final Guide and it was submitted to CRGR at this time for endorsement as an immediately effective Regulatory Guide for application by licensees who chose to use this guidance.

Copies of briefing slides used by the staff to guide the presentations and discussions at this meeting are provided in the Attachment 3A.

BACKGROUND

The package provided for review by CRGR was transmitted by memorandum, dated January 13, 1995, E.S. Beckjord to E.L. Jordan: that package contained the following documents:

1. Draft Final Regulatory Guide (DG-1023), dated December 1994, "Evaluation of Reactor Pressure Vessels with Charpy Upper-Shelf Energy Less Than 50 Ft-Lb", with appendices and enclosure as follows:

   a. Appendix A - "Example Cases"

   b. Appendix B - "Computation of Stress Intensity Factors"

   c. Enclosure - "Regulatory Analysis"

2. "Staff Response to Public Comments on DG-1023", (undated);

3. "CRGR Information", (undated enclosure addressing the provisions of CRGR Charter, Section IV.B., "Contents of Packages Submitted to CRGR")

4. "Draft Federal Register Notice on Final Regulatory Guide Issuance" (undated)

CONCLUSIONS\RECOMMENDATIONS

The Committee complimented the staff on this effort, and endorsed the Regulatory Guide for publication subject to several additional minor changes discussed at the meeting and reflected in Attachment 3B. (The changes made to the package as a result of CRGR comments should be coordinated with the CRGR staff.)

BACKFITTING AND SAFETY GOAL CONSIDERATIONS

The proposed Guide contains new staff positions, but the staff does not seek to impose the new positions on existing plants. This guidance is intended for voluntary implementation by licensees; therefore, issuance of this Regulatory Guide is not considered a backfitting action. The guidance included in this new Guide provides an acceptable alternate means of complying with the applicable NRC regulations and maintaining a level of safety consistent with the Commission's safety goals.

Presentation On

Proposed Final Regulatory Guide,

"Evaluation of Reactor Pressure Vessels With Charpy Upper-Shelf Energy Less Than 50 ft-lb"

To

Committee to Review Generic Requirements (CRGR)

By

Shah N. Malik
Electrical, Materials & Mechanical Engineering Branch
Division of Engineering Technology, Office of Research
Phone: (301) 415 - 6007, 7001

February 14, 1995

Attachment 3A

PROPOSED FINAL REGULATORY GUIDE "EVALUATION OF REACTOR PRESSURE VESSELS WITH CHARPY UPPER-SHELF ENERGY LESS THAN 50 FT-LB"

History of Charpy Upper-Shelf Energy Guide

- Presented to **ACRS** -- 6/93
- Presented to **CRGR** -- 7/93
- Published as a **draft guide**, DG-1023, in 9/93
- Public comment period -- 10/93 to 1/94
- Proposed final reg. guide presented to ACRS -- 12/94
- Pending approval, final reg. guide to be published in Feb./March 1995

PROPOSED FINAL REGULATORY GUIDE "EVALUATION OF REACTOR PRESSURE VESSELS WITH CHARPY UPPER-SHELF ENERGY LESS THAN 50 FT-LB"

Need for Regulatory Guidance

- Appendix G to 10 CFR Part 50 requires:
  - Unirradiated Charpy USE > 75 ft-lb
  - Charpy USE > 50 ft-lb, throughout the plant life
    OR
  - Analysis to demonstrate margins of safety equivalent to those in ASME, Section III, Appendix G

- Unresolved Safety Issue (USI) A-11 addressed vessels with USE below 50 ft-lb
  - USI resolved with publication of NUREG-0744 in 1982
  - Staff asked ASME Section XI to develop acceptance criteria

- ASME, Section XI, issued Appendix **K** (Code Case **N-512**) in 1993
  - It does not address **material properties** and **transients selection**

Similarities and Differences with ASME Appendix K (Code Case N-512)

- Proposed final reg guide and ASME, Section XI, Appendix **K** are identical concerning

  - Acceptance criteria
  - Service load levels
  - Flaw shapes, size, orientations
  - Safety Margins

- Appendix **K** has conservative analysis for Load Levels A&B (Normal & Upset)

  - The proposed guide includes a more rigorous analysis for Load Levels A&B (normal & upset conditions)

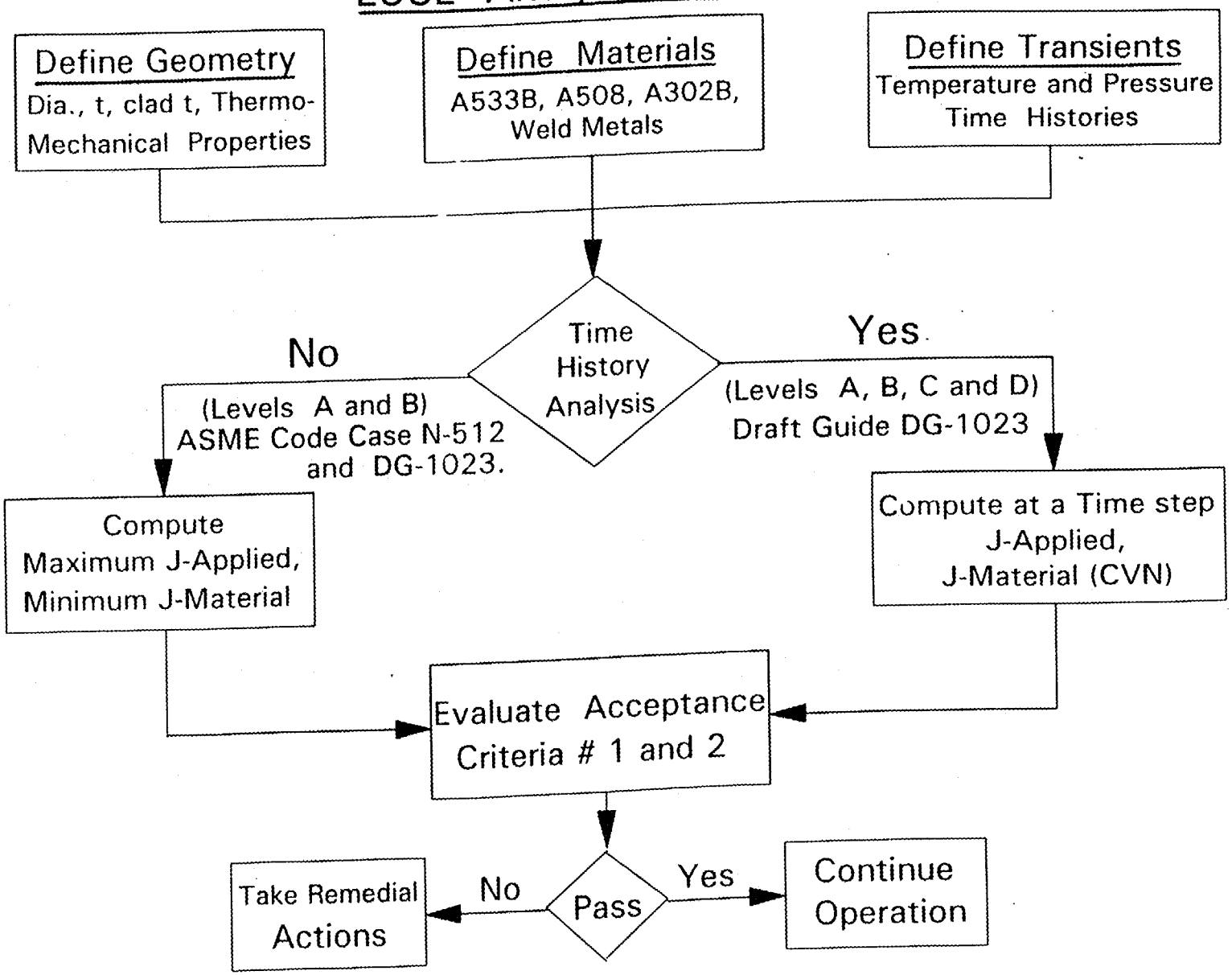
- Appendix **K** does not provide guidance on specific material properties and transients selection

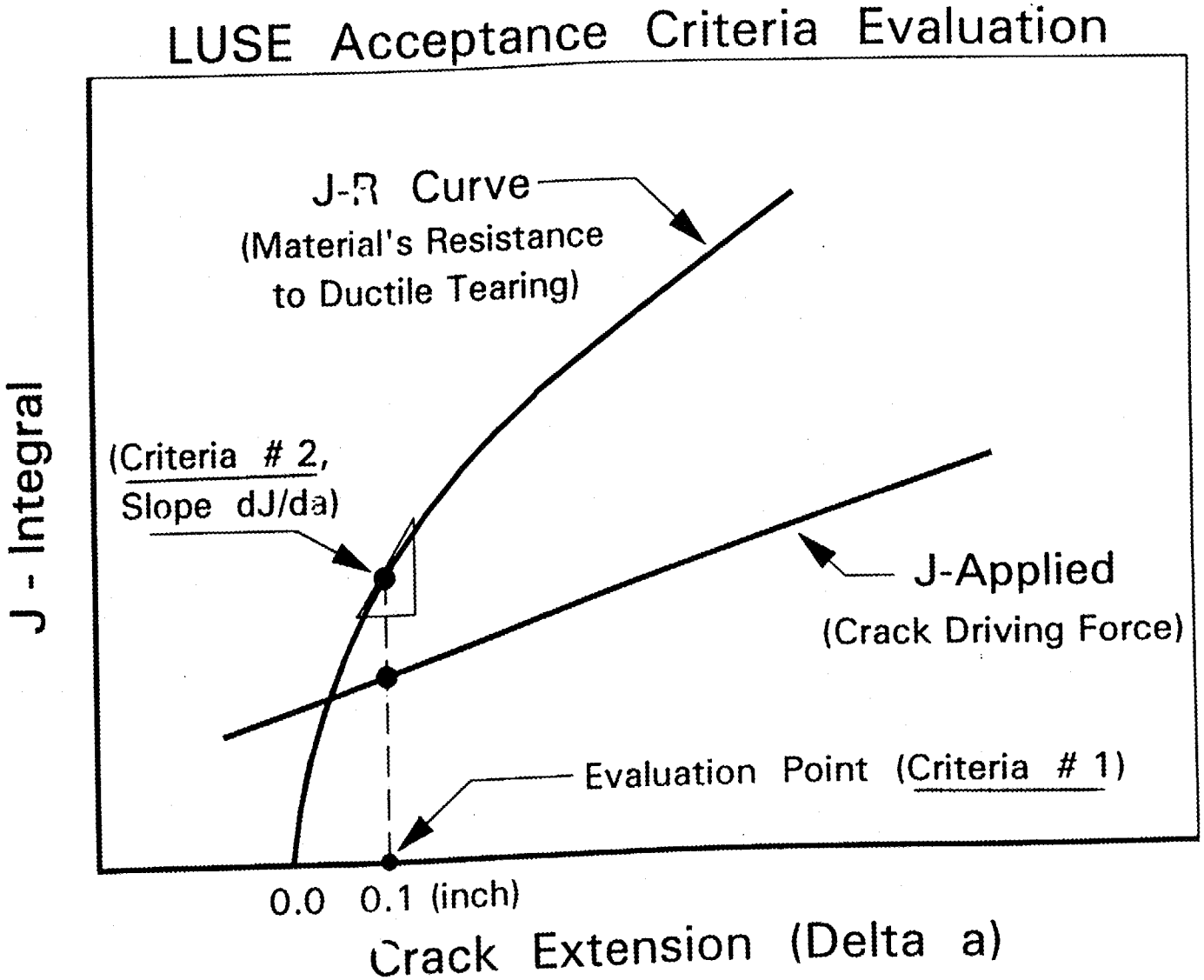
  - Proposed final guide provides guidance on both of these issues

Features of the Proposed Final Reg. Guide

- Describes acceptable methods to demonstrate safety margins against ductile fracture per Appendix G to 10 CFR Part 50.
- Consistent with past staff practice
- Does not impose additional staff requirements on licensees
- Methods in the proposed reg. guide are optional
- Relaxes more stringent requirements in ASME, Section XI, Appendix-K (Code Case N-512), for Levels A&B

LUSE Analysis Method




LUSE Acceptance Criteria Evaluation
J-R Curve
(Material's Resistance
to Ductile Tearing)
(Criteria # 2,
Slope dJ/da)
J-Applied
(Crack Driving Force)
Evaluation Point (Criteria # 1)
J - Integral
0.0
0.1 (inch)
Crack Extension (Delta a)

Acceptance Criteria:

1. "**Initiation**" of **ductile** crack **growth:**

$$J_{applied} \leq J_{material} \quad \textbf{(at Crack Extension, } \Delta a = 0.1 \textbf{ inch)}$$

2. "**Stability**" of **ductile** crack **growth:**

$$\frac{dJ_{applied}}{da} \leq \frac{dJ_{material}}{da} \quad \textbf{(at } J_{applied} = J_{material}\textbf{)}$$

Service Level	Safety Factor on Accumulation Pressure	Crack Depth (in.)	**J-R** Curve Bounds
A & B	For Crit. 1: SF = 1.15 For Crit. 2: SF = 1.25	$0.25t + 0.1$	Mean - 2σ
C	For Crit. 1&2: SF = 1	$(.1t + t_{CL} + .1) \leq 1.$	Mean - 2σ
D	For Crit. 1&2: SF = 1	$(.1t + t_{CL} + .1) \leq 1.$	Mean

SERVICE LOAD CONDITIONS:

* Service Loads are defined in the ASME Code, and also in SRP, Section 3.9.3

* Considers design basis transients, and also the low prob. events (e.g.: ATWS)

  - Levels A and B (Normal and Upset) Conditions

    -- Normal and system operating transients

  - Level C (Emergency) Conditions

    -- Small LOCA
    -- Small steam line break (SLB)
    -- ATWS (anticipated transient without scram)

  - Level D (Faulted) Conditions

    -- Large LOCA and SLB
    -- Main steam and feed water pipe breaks

Materials' J-R Curve:

- As per NUREG/CR-5729 data on deformation-plasticity **J** (ASTM E-1152-87)

- For **A533B, A508**, and Welds (Linde 80, Generic)

$$J_d = (SF).\{C1 \,.\, (\Delta a)^{C2} \,.\, Exp\,[C3 \,.\, (\Delta a)^{C4}\,]\}$$

  - Based on statistical analysis of test data
  - Unirradiated and irradiated conditions
  - Typical materials (plate, forging, welds)
  - Test conditions typical of service

- For Low Toughness **A302B** Plate (**S > 0.018%**) Material

  - Limited data base on **A302B** plate materials (NUREG/CR-5265)
    * One plate -- identified as V-50
    * One orientation (transverse) and one test temperature (180°F)

  - Additional testing on several heats of the material is completed, and data reduction is underway

Transient Selection:

- Builds on the "design basis" transients
- No requirement to perform "system-level" analyses
- If appropriate transients **not** included in design basis or the list is incomplete, use **generic** transients from similar, later vintage plants
- If **no** plant-specific transient s available, use a conservative **"bounding"** Pressure-temperature-time history. They may be taken to be:
  - * 100°F/hr cooldown rate for Service Load Levels A & B
  - * 400°F/hr cooldown rate for Service Load Level C
  - * 600°F/hr cooldown rate for Service Load Level D

Experience With the Proposed final Reg. Guide Methodology:

- Gained considerable experience using the methods in the proposed final guide

- Generic Bounding Analyses

  - Show USE below 50 ft-lb will satisfy the acceptance criteria

    * PWR and BWR vessels
    * Service Load Levels A & B, C and D
    * **CVN** and **Cu-ϕt** models for the **J-R** curves
    * A533B plate, Linde 80 weld, generic weld, and A302B plate

- ASME, Section XI, Round-Robin Analysis

  - Round-robin analyses for Service Levels C and D showed reasonable agreement among the results by several analysts

STAFF RESPONSE TO PUBLIC COMMENTS ON DG-1023

Comment 1: W.H. Raisin, NUMARC/NEI, Washington, DC, January 28, 1994.

Remove ATWS transients from the guide for following reasons:

- Inclusion of ATWS not a matter of compliance with existing regulation - it is a backfit;
- Owners Gruop Analyses are more limiting than the ATWS Rule; **and,**
- The safety enhancement is negligible -- does not justify further regulatory action.

Staff Response:

- ATWS is added to the transients as part of compliance with Appendix G to 10 CFR 50
  - Does not impose backfitting in operating U.S. LWRs.

- ATWS in operating U.S. LWRs is not a dominant transient for LUSE issue.
  - NUREG/CR-6023 bounding analyses and the staff work, showed Charpy USE can drop to 35 ft-lb and still meet the LUSE acceptance criteria.

- For plant modifications and for new reactors, ATWS to be evaluated for LUSE issue.

- Regulatory Section 4 (Transient Selection) has been modified to reflect this position

STAFF RESPONSE TO PUBLIC COMMENTS ON DG-1023 (Contd.)

Comment 2: Joseph M. Bloom, Babcock & Wilcox Company, Alliance, Ohio, dated February 11, 1994.

Equation 16 on page 19 (tensile instability of the remaining ligament) overly conservative (for **6:1 aspect ratio** semi-elliptical **flaws**).

Staff Response:

- Staff agrees that the Equation 16 in the proposed guide is conservative
- Equation 16 in the proposed final reg. guide has been modified to incorporate commenter's work

STAFF RESPONSE TO PUBLIC COMMENTS ON DG-1023 (Contd.)

Comment 3: Gery M. Wilkowski, Battelle Memorial Institute, Columbus, Ohio, dated December 12, 1993.

- ASME Appendix-K specifies to use "J-R curve with the proper combination of crack orientation, temperature and fluence level".

- ***actual*** direction of concern for crack growth
  - **L-S** direction for **axial** surface cracks, and
  - **T-S** direction for **circumferential** surface cracks.

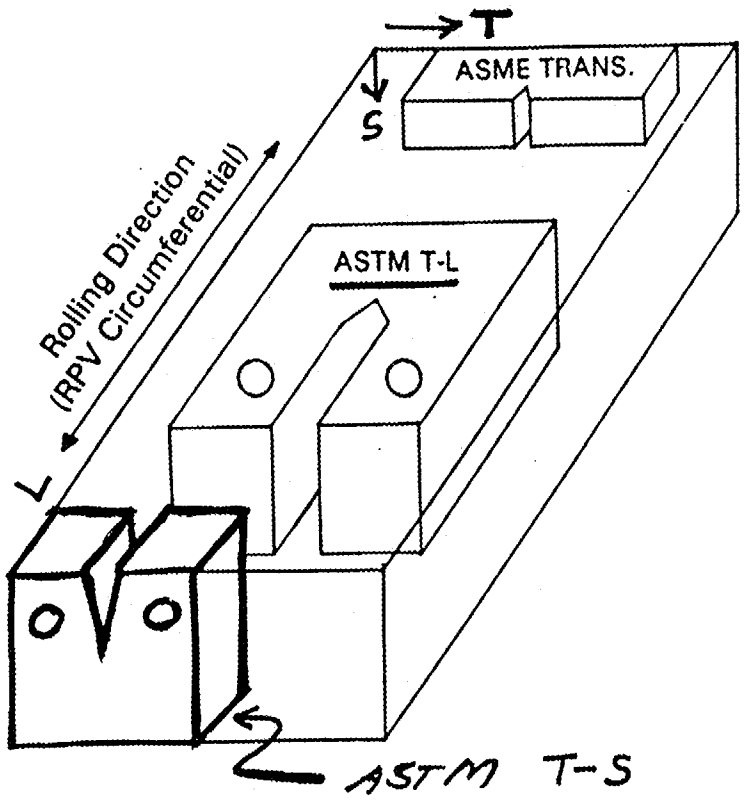
Staff Response:

- **L-T** and **T-L** orientations have been conservatively used for fracture toughness properties in RPVs.
- Staff believes such conservatism is warranted for toughness properties selection

DEFINITION OF ASME AND ASTM ORIENTATIONS

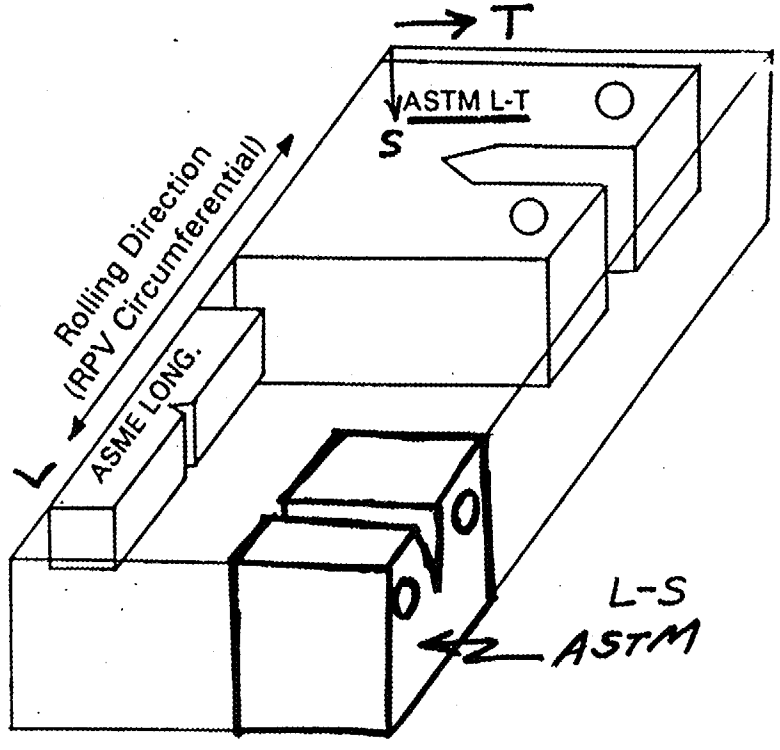
"WEAK" DIRECTION

ASME TRANSVERSE
ASTM T-L
RPV CIRC. FLAW



"STRONG" DIRECTION

ASME LONGITUDINAL
ASTM L-T
RPV AXIAL FLAW



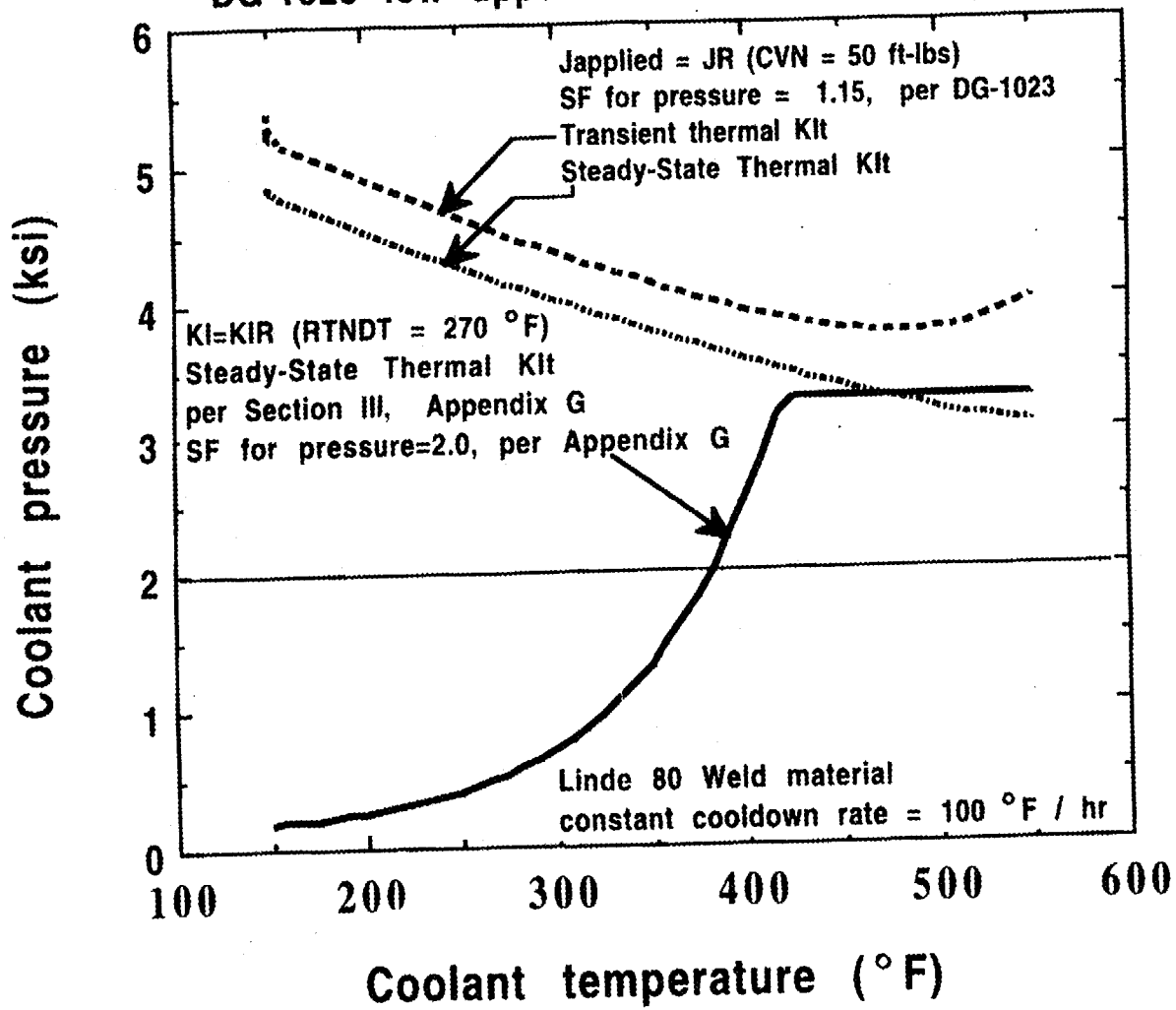
ACRS COMMENTS (12/20/94)

- Recommended publication of the final regulatory guide
- The "combined" safety margins in the reg. guide to be not overly conservative -- with respect to the margins in Appendix-G to Section III of the ASME Code

Staff Response:

- Demonstrated an equivalence in safety margins for the guide, to generate a P-T curve, per Section-III of ASME Code, using
  - * Limiting irradiation condition -- at PTS Screening Criteria (RT_{NDT} = 270°F)
  - * Maximum Service Levels A&B cooldown rate -- 100°F/hour
  - * Limiting Charpy upper-shelf energy -- 50 ft-lb
- Figure shows that in the "upper" transition-region, the Section III and the LUSE reg. guide methods provide equivalent P-T curve values

Comparison of pressure-temperature curves for
ASME Section III, Appendix G, cleavage fracture analysis and
DG-1023 low upper-shelf ductile tearing analysis



Conclusions:

- Extensive generic bounding analyses were performed using the proposed guide

- Demonstrated efficacy of the approach

- Results obtained using the proposed final reg. guide on ASME Section-XI bench-marking problems agree with results by other analysts.

- Compared to **Appendix-K** of ASME Section-XI, the proposed final reg. guide,

  * Provides an additional analysis method for Service Levels A&B -- more rigorous and with less inherent-conservatism
  * Provides complete analysis methodology -- analysis formulation; material properties; transients selection; acceptance criteria

- Staff response to public comments have now been added in the guide.

- Needs for this guide are still present, due to lack of additional actions from ASME code on the **material properties** and **transients selection** in Appendix-K

ATTACHMENT 3B

REVISED PAGES REFLECTING CRGR COMMENTS

[Revised page from Reg Guide DG1023, showing revision due to CRGR comment]

B. DISCUSSION

The problem of evaluating materials that do not satisfy the 50 ft-lb upper-shelf energy requirement was recognized by the NRC staff several years ago and was designated Unresolved Safety Issue A-11, "Reactor Vessel Materials Toughness." In 1982, the staff completed resolution of USI A-11 by issuing NUREG-0744, "Resolution of the Task A-11 Reactor Vessel Materials Toughness Safety Issue" (Ref. 5), which provided methods for evaluating the fracture behavior of these materials. Further, Generic Letter 82-26 (Ref. 6) was issued to advise licensees of the USI resolution. No new requirements were implemented as part of the USI resolution. However, neither NUREG-0744 nor Generic Letter 82-26 contained criteria for demonstrating equivalence of margins with Appendix G of the ASME Code. Rather, the NRC staff asked Section XI of the ASME Boiler Pressure Vessel Code Committee to develop and suggest to the staff appropriate criteria.

In February 1991, the Chairman of the ASME, Section XI, Subgroup on Evaluation and Standards, provided to the NRC staff criteria that had been developed by members of the Working Group on Flaw Evaluation (WGFE) and the Working Group on Operating Plant Criteria (WGOPC) (Ref. 7). Although these criteria did not represent ASME Code criteria, they did represent the best opinion of knowledgeable persons familiar with the problem and with the ASME Code.

Upon review, the NRC staff found these criteria to be an acceptable method for demonstrating margins of safety equivalent to those in Appendix G of the ASME Code (Ref. 3). However, specific methods for evaluating the criteria still were being developed by the cognizant ASME Code committees. Further, those efforts were not expected to provide specific guidance on determining event sequences and transients to be considered, nor were they expected to provide specific guidance on appropriate material properties.

This guide has been developed to provide ~~the specific~~ comprehensive guidance ~~needed to evaluate~~ acceptable for evaluating reactor pressure vessels when the Charpy upper-shelf energy falls below the 50 ft-lb limit of Appendix G to 10 CFR Part 50. The analysis methods in the Regulatory Position are

APPENDIX B: Computation of Stress Intensity Factors

Information about computing transient temperature gradient across the vessel wall thickness, thermal stresses, pressure, and thermal stress intensity factors (K_{Ip}, K_{It}) are provided in this Appendix as FORTRAN subroutines from the VISA-II code. Additional details on the computational method, theory used, limitations, and names of the major variables used are available in NUREG/CR-4486[1] and NUREG/CR-3384[2]. The computer code provided in this Appendix is for general illustration only, as to how the cladding effects could be incorporated for thermal stresses and thermal stress intensity factors due to differential thermal expansion between the cladding and the base metal. The licensees ~~assume responsibility of correctness of the computer code they use~~ should ensure that the computer code they use includes an indepth evalaution of these effects.

A description of cladding-induced thermal stress intensity factor is presented in Appendix A to NUREG/CR-4486. Limitations of the stress intensity factor correction factors for finite length semi-elliptical surface flaws are indicated in the Appendix C to NUREG/CR-4486. In developing these correction factors, only uniform membrane and linear bending stresses were considered.

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[1]F.A. Simonen et al., "VISA-II - A Computer Code for Predicting the Probability of Reactor Pressure Vessel Failure", USNRC, NUREG/CR-4486, March 1986.

[2]D.L. Stevens et al., "VISA - A Computer Code for Predicting the Probability of Reactor Pressure Vessel Failure", USNRC, NUREG/CR-3384, September 1983.

Copies are available for inspection or copying for a fee from the NRC Public Document Room at 2120 L Street NW., Washington, DC; the PDR's mailing address is Mail Stop LL-6, Washington, DC 20555; telephone (202) 634-3273; fax (202) 634-3343. Copies of NUREG/Cars may be purchased at current rates from the U.S. Government Printing Office, Post Office Box 37082, Washington, DC 20013-7082 (telephone (202) 512-2249 or (202) 512-2171); or from the National Technical Information Service by writing NTIS at 5285 Port Royal Road, Springfield, VA 22161.

REGULATORY ANALYSIS

1. STATEMENT OF THE PROBLEM

Appendix G, "Fracture Toughness Requirements," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires, in part, that the reactor vessel beltline materials "...must have Charpy upper-shelf energy of no less than 75 ft-lb (102J) initially and must maintain upper-shelf energy throughout the life of the vessel of no less than 50 ft-lb (68J), unless it is demonstrated in a manner approved by the Director, Office of Nuclear Reactor Regulation, that lower values of upper-shelf energy will provide margins of safety against fracture equivalent to those required by Appendix G of the ASME Code." The proposed final Regulatory Guide, DG-1023, "Evaluation of Reactor Pressure Vessels with Charpy Upper-Shelf Energy Less Than 50 ft-lb," is being developed to provide acceptance criteria and analysis methods acceptable to the NRC staff for demonstrating margins equivalent to those in Appendix G to Section III of the ASME Code.

Publication of regulatory guidance ~~at this time is necessary~~ was undertaken because no comprehensive guidance currently exists, and there are reactors, both Pressurized Water Reactors and Boiling Water Reactors, with upper-shelf energy that is projected to fall below the 50 ft-lb regulatory limit before the end of the current license period. Without a comprehensive regulatory guidance, each affected licensee will have to submit a plant-specific analysis, including acceptance criteria and evaluation methods, and the staff will have to evaluate each submittal without the benefit of stated acceptance criteria and approved evaluation methods.

2. OBJECTIVES

The objective of this guide is to provide acceptance criteria and evaluation methods acceptable to the NRC staff for demonstrating margins equivalent to those in Appendix G to Section III of the ASME Code for those beltline materials whose Charpy upper-shelf energy falls below the regulatory limit provided in Appendix G to 10 CFR Part 50.

3. ALTERNATIVES

ATTACHMENT 2

RESOLUTION OF PUBLIC AND DIVISION COMMENTS

Comment 3: Received from Gery M. Wilkowski, Battelle Memorial Institute, Columbus, Ohio, dated December 12, 1993.

The ASME Code Case N-512 says to use the "J-R curve with the proper combination of crack orientation, temperature and fluence level". The *actual* direction of concern for crack growth is the L-S direction for axial surface cracks and the T-S direction for circumferential surface cracks. The L-T and T-L orientations correspond to growth for a through-wall crack not a surface crack, but these directions have historically been used in regulatory, surveillance capsules, as well as ASME and ASTM standards. However, surface crack growth is the real concern. As it turns out, the L-S and T-S toughnesses for ferritic-base metals are higher than the L-T and T-L toughnesses, respectively.

Staff Response:

As recognized by the commenter, the L-T and T-L orientations have historically been used in the fracture toughness properties evaluation for RPVs. Since it deals with the material properties, the staff believes such conservatism is warranted. While it may be true that such use is conservative, in view of the historic practice of using these orientations and the lack of additional justification (i.e., significant amount of test data) for using L-S and T-S orientation toughness values, even though they may represent more realistic directions of surface crack growth in RPVs, the staff does not intend to make changes relative to this comment.

CRGR Information

The CRGR Charter requires that specific information be included in submittal packages. For this submittal package, some of the required information is included in the proposed final regulatory guide, DG-1023 (Enclosure 1). Required information that is not included in this document is included in this enclosure. For convenience, information contained in the aforementioned document is cross-referenced herein.

The following information requests have been extracted from the CRGR Charter.

1. **"The proposed generic requirement or staff position as it is to be sent out to licensees."**

   The proposed final Regulatory Guide is provided in Attachment 1. It is comprised of a regulatory position containing the acceptance criteria, analysis methods, material properties determination, transients selection, implementation, and a regulatory analysis. The described methods and criteria in the active guide reflecting public comments will be used by the NRC staff, except in those cases in which an applicant proposes a previously approved practice or an acceptable alternative method, in evaluating all analyses submitted to demonstrate compliance with 10 CFR Part 50, Appendix G, Section IV.A.1.a.

2. **"Draft staff papers or other underlying staff documents supporting the requirements or staff position. (A copy of all materials referenced in the document shall be made available upon request to the CRGR staff. Any committee member may request CRGR staff to obtain a copy of any reference material for his or her use.)"**

   A list of references is provided in the proposed final regulatory guide. In addition, references in the form of foot-notes are presented in the proposed final guide, where ever appropriate. These are as following:

   a. Letter from Warren H. Bamford (Chairman of the ASME, Section XI, Subgroup on Evaluation and Standards) to James E. Richardson (Director, Division of Engineering, NRR, USNRC), dated February 20, 1991.

   b. Dickson, T.L., "Generic Analyses for Evaluation of Low Charpy Upper-Shelf Energy Effects on Safety Margins Against Fracture of Reactor Pressure Vessel Materials", NUREG/CR-6023, May 1993.

   c. Johnson, R., "Resolution of the Task A-11 Reactor Vessel Materials Toughness Safety Issue", USNRC, NUREG-0744, Volume 1 (Revision 1) and Volume 2 (Revision 1), October 1982.

   d. GENERIC LETTER No. 82-26, "NUREG-0744 Rev. 1; Pressure Vessel Material Fracture toughness," Issued by Darrel G. Eisenhut, Director, Division of Licensing, Office of NRR, USNRC, November 12, 1982.

The proposed final regulatory guide, DG-1023, would not increase the requirements. It provides acceptance criteria, methods of analysis, methods for determining appropriate materials properties, and guidelines on selection of loading transients. Application of these methods and selection procedures is acceptable to the NRC staff for demonstrating compliance with Section IV.A.1.a of the Appendix G to 10 CFR Part 50 on the basis of obtaining margins of safety equivalent to those in Appendix G to Section III of the ASME Code.

Publication of the proposed final regulatory guidance ~~at this time is necessary~~ was undertaken because no comprehensive guidance currently exists and there are reactors, both pressurized water reactors (PWR) and boiling water reactors (BWR), which may not be in compliance with the regulatory limit, of Section IV.A.1.a of the Appendix G to 10 CFR Part 50, before the end of the current license period. Without a comprehensive regulatory guidance, each affected licensee will have to submit a plant-specific analysis, including acceptance criteria and evaluation methods, and the staff will have to evaluate each submittal without the benefit of stated acceptance criteria and approved evaluation and selection methods.

4. **"The proposed method of implementation along with the concurrence (and any comments) of OGC on the method proposed."**

The proposed method of implementation ~~requires~~ specifies analysis of reactor pressure vessels under appropriately selected loading transients and material's ductile tearing resistance properties which are quite similar to Appendix K to Section XI of the ASME Code. However, the Appendix K does not provide detailed guidance on selection of material's ductile tearing resistance and on applied crack driving force under service levels C (emergency) and D (faulted) transients.

In addition, the Appendix K's safety margins evaluation for service levels A and B (normal and upset) conditions is very conservative, and may cause some plants to fail the acceptance criteria. Under these conditions, the proposed method provides more realistic safety margins evaluation, and could provide relief to those plants which may otherwise have to be subjected to costly actions to bring them in compliance with Appendix G to 10 CFR Part 50.

The procedures discussed in the proposed final regulatory guide are familiar to the industry, and no implementation problems are expected. The OGC has reviewed the proposed methods and has no legal objection to the methods specified in the proposed final regulatory guide.

5. **"Regulatory Analyses as specified in NUREG/BR-0058, Revision 1, May 1984, Regulatory Analysis Guidelines of the U.S. NRC."**

The regulatory analysis is provided in the proposed final regulatory guide. The regulatory analysis contains information about the objectives of the proposed final regulatory guide, alternatives to issuing the regulatory guide, costs and benefits of these alternatives, and decision rational for issuing the proposed regulatory guide.

6. "Identification of the category of reactor plants to which the generic requirement or staff position is to apply (that is, whether it is to apply to new plants only, new OLs only, OLs after a certain date, OLs before a certain date, all OLs, all water reactors, all PWRs only, some vendor types, some vintage types such as BWR 6 and 4, jet pump and nonjet pump plants, etc.)."

The proposed regulatory guide ~~would apply to~~ may be used by all operating plants and ~~to~~ any new plants.

7. "For each category of reactor plant, the evaluation should also demonstrate how the action should be prioritized and scheduled in light of other ongoing regulatory actions."

Recognizing that licensees of all operating plants are required to comply with Appendix G to 10 CFR Part 50 for all OLs, the proposed final regulatory guide should become effective immediately ~~after the proposed final guide is approved~~ for application by licensees who choose to implement it.

8. "The evaluation is to consider information available concerning any of the following factors as may be appropriate and any other information relevant and material to the proposed action:

   a. "Statement of the specific objectives that the proposed action is designed to achieve;"

      Appendix G, "Fracture Toughness Requirements," to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," requires, in part, that the reactor vessel beltline materials "...must have Charpy upper-shelf energy of no less than 75 ft-lb (102J) initially and must maintain upper-shelf energy throughout the life of the vessel of no less than 50 ft-lb (68J), unless it is demonstrated in a manner approved by the Director, Office of Nuclear Reactor Regulation, that lower values of upper-shelf energy will provide margins of safety against fracture equivalent to those required by Appendix G of the ASME Code." Charpy upper-shelf energy is defined in ASTM E 185-79 and -82, which are incorporated by reference in Appendix H, "Reactor Vessel Material Surveillance Program Requirements," of 10 CFR Part 50. This guide describes general procedures acceptable to the NRC staff for demonstrating equivalence to the margins of safety in Appendix G of the ASME Code. Several examples using these procedures are presented in Appendix-A to this guide, and in more detail in NUREG/CR-6023.

Any information collection activities mentioned in this proposed final regulatory guide are contained as requirements in 10 CFR Part 50, which provides the regulatory basis for this guide. The information collection requirements in 10 CFR Part 50 have been approved by the Office of Management and Budget, Approval No. 3150-0011.

b. "General Description of the activity that would be required by the licensees or applicant in order to complete the action;"

This guide has been developed to provide ~~the specific~~ comprehensive guidance ~~to evaluate~~ acceptable for evaluating reactor pressure vessels when the Charpy upper-shelf energy falls below the 50 ft-lb limit of Appendix G to 10 CFR Part 50. The analysis methods in the Regulatory Position are based on methods developed for the Appendix K to Section XI of the ASME Code. The staff has reviewed the analysis methods and finds that they are technically acceptable. Specific guidance is provided on selecting the transients for consideration and on appropriate material properties.

The material property needed in the analysis methods in this guide is the material's J-integral fracture resistance, the J-R curve. This curve is a function of the material, the irradiation condition, the loading rate, and the material temperature. The curve is determined by testing the specific material, under the conditions of interest, in accordance with the American Society for Testing and Materials Standard Test Method E 1152-87, "Standard Test Method for Determining J-R Curves". The possibility of cleavage mode-conversion of the ductile tearing process is still not well characterized and is not considered in this proposed final regulatory guide.

Unfortunately, the specific material of interest is seldom available for testing. Thus, testing programs have used generic materials that are expected to represent the range of actual materials used in fabricating reactor pressure vessels in the United States. Statistical analyses of these generic data have been performed and reported in NUREG/CR-5729, "Multivariable Modeling of Pressure Vessel and Piping J-R Data". These analyses provide a method for determining the material's J-integral fracture resistance that the NRC staff finds acceptable for use in the methods described in this guide. Other methods for determining the material property may be used on an individual case basis if justified.

The statistical analyses reported in NUREG/CR-5729 addressed a broad range of materials and conditions. For the purposes of this

guide, the NRC staff has concluded that only the ASTM E 1152-87 definition of the J-integral fracture resistance curve should be used. This determination requires that a test specimen's net thickness, B_n, be specified. Smaller specimens typically produce more conservative (lower) J-R curves than larger specimens. However, larger specimens are needed to provide large amounts of crack growth needed in evaluating certain stability criteria described in Regulatory Position 2 of the proposed final guide. The NRC staff recommends the test specimen's net-thickness, B_n, to be 1.0 inch for determining the J-integral resistance curve using the methods specified in Regulatory Position 3. This is a reasonable compromise and slightly simplifies the equations for the material J-R curves.

c. **"Potential change in the risk to the public from the accidental offsite release of radioactive materials;"**

A proper implementation of the proposed final regulatory guide ~~would not change~~ will ensure that there is not a potential change in risk to the public from the accidental offsite release of radioactive material, ~~as long as the~~ because compliance with Appendix G to 10 CFR Part 50 and §50.61 is maintained.

d. **"Potential impact on radiological exposure of facility employees;"**

Implementation of this regulatory guide is not expected to result in significant radiological exposure.

e. **"Installation and continuing costs associated with the action, including the cost of facility downtime or the cost of construction delay;"**

Publishing the final regulatory guide is recommended over the alternative of endorsing the Appendix K to Section XI of the ASME Code because the Appendix K does not include evaluation procedures for Service Levels C and D, it does not include guidance on selecting the transients for evaluation, and it does not include material properties. The NRC staff considered the possibility of working with the ASME Code Section XI to modify the code case to include the missing procedures and data. However, given the number of plants that could need the guidance in the near term, and given the ASME codification process and the NRC's process for endorsing ASME appendices, the time needed to modify and endorse the appendix was judged to be excessive.

i. "Whether the proposed action is interim or final, and if interim, the justification for imposing the proposed action on an interim basis."

The proposed regulatory guide will become final upon approval ~~by the CRGR~~ for final publication of the guide. Thereafter, the licensees will be able to submit the so-called equivalent safety margins' analyses based on the guidelines of the final regulatory guide.

8. "For each evaluation conducted pursuant to 10 CFR 50.109, the proposing office director shall determine based on the considerations or paragraphs 1 through 7 above, whether:

a. the proposal would result in a substantial increase in overall protection of public health and safety or the common defense and security; and

b. the direct and indirect costs of implementation, for the facilities affected, are justified in view of this increased protection."

~~A determination has been made, based upon information presented in the regulatory analysis contained in Enclosure 1, that a licensee submittal satisfying the acceptance criteria proposed in the final regulatory guide would result in an increase in the overall protection of public health and safety. The direct and indirect costs of implementation, for the facilities affected, are justified in view of this increased protection.~~

Not applicable.

9. "For each evaluation conducted for proposed relaxation or decreases in current staff positions, the proposing office director shall determine, based on the considerations of paragraphs 1 through 7 above, whether:

a. the proposal would result in any decrease in plant safety; and

b. the proposal would result in substantial cost savings for the industry."

~~The proposed final regulatory guide is not expected to result in any decrease on plant safety, nor result in an overall substantial cost savings for the industry~~.

A proper implementation of the proposed final regulatory guide will maintain adequte plant safety, and would result in overall substantial cost savings for the industry. Without a comprhensive reglatory guidance, each affected licesee will have to submit a plant-specific analysis, including acceptance criteria and evaluation methods.

Attachment 4 to the Minutes of the CRGR Meeting No. 269

CRGR Charter Revision

February 14, 1995

TOPIC

The Committee discussed resubmittal to the EDO of a revised draft Revision 6 to CRGR Charter. (An earlier version of this proposed charter revision was transmitted to the EDO in December 1993, but was returned without EDO action while the possible abolishment of CRGR was being considered by the EDO and Commission.) Various aspects of the current proposed charter revision were discussed by the Committee at CRGR Meetings Nos. 211, 233, 243, 246, 247, 248, 251, 255, and 259. The major changes incorporated in proposed Revision 6 include: (i) improved guidance on consideration of qualitative factors for justification of proposed backfits, and (ii) expansion of the scope of CRGR activities, on a trial basis, to include review of selected items in the nuclear materials area. In conjunction with the proposed changes to the CRGR Charter, the Committee also discussed possible means/mechanisms for reducing the level of effort by CRGR members in carrying out their CRGR duties.

BACKGROUND

1. Enclosure 4 to the Minutes of CRGR Meeting No. 233, dated November 24, 1992

2. SRM (SECY-93-086), dated June 30, 1993, "Backfit Considerations"

3. Commission Paper (SECY-94-109), dated April 21, 1994, "Scope of Review for the Committee to Review Generic Requirements (CRGR)"

4. SRM (SECY-94-109), dated June 15, 1994, "Scope of Review for the Committee to Review Generic Requirements (CRGR)"

5. Commission Paper (SECY-94-141), dated May 23, 1994, "Improvement of the Rulemaking Process"

6. SRM (SECY-94-141), dated June 28, 1994, "Improvement of the Rulemaking Process"

7. Enclosure 4 to the Minutes of CRGR Meeting No. 259, dated August 3, 1994

8. Draft package, dated February 1, for proposed Revision 6 to the CRGR Charter

CONCLUSIONS\RECOMMENDATIONS

1. The Committee endorsed for inclusion (as a new Attachment 3) in proposed Revision 6 to the Charter improved guidance on consideration of qualitative factors for justification of proposed backfits. (This CRGR action is in response to SRM (SECY-93-086) dated June 30, 1993 - see Background

Item 2.) The new guidance is more detailed than, and goes beyond, related guidance provided in proposed Revision 2 to the Regulatory Analysis Guidelines (NUREG/BR-0058) submitted recently for Commission approval. After careful deliberation on this point, the Committee believes that the new Charter guidance is a logical extension of the guidance provided in the new Guidelines, and is consistent with the Commission's objectives reflected in the SRM. The Committee believes that the guidance in the two documents is consistent, and does not believe it is necessary to revise the Guidelines at this point to provide identical guidance in both documents.

2. The Committee also endorsed for inclusion in proposed Revision 6 a change to the CRGR scope of review specifying that, on a trial basis, the Committee will review selected items in the nuclear materials area. (This CRGR action is in response to SRM (SECY-94-109) dated June 15, 1994 - see Background Item 4) As discussed in Attachment 2 preceding, candidate items identified for CRGR review during the next year include: (i) licensing of dry cask storage of spent fuel; (ii) interim low-level waste storage issues (e.g., transportation of potentially flammable\ dispersible waste forms); and (iii) radiation safety\hazards considerations and criticality issues related to the fuel cycle facilities. As a part of the trial process, for each such item submitted by NMSS for review, the Committee will assess the need for and the value added by CRGR review of such items. The Committee's assessments in this regard will be included in the meeting minutes for each item and will be reported to the EDO in the Weekly Items of Interest, which are forwarded to the Commission.

   Following approval by the Commission, Revision 6 to the Charter will be distributed to all licensees. Appropriate modifications will be made to Management Directive 5.14 to provide consistent and standardized procedures for implementation by the NRC program offices and regional staff; and training sessions will be conducted for regional and program office staff in support of implementation of the revised Charter.

3. In addition to the major revisions discussed in the preceding, the Committee recommended a number of additional changes for the purpose of further updating and clarifying the Charter. All of the changes made to the Charter in proposed Revision 6 are reflected in Attachment 4A.

4. In conjunction with its consideration and endorsement of proposed Revision 6, CRGR has also adopted the practice of making use of the negative consent process where possible, and has been emphasizing the elimination of dual reviews (i.e., review at both the proposed and final stages), when these measures seem to be appropriate based on a lack of controversy. (These measures were implemented in response to SRM (SECY-94-109), dated June 15, 1994, which requested the Committee to explore possible means/measures to lessen the amount of time spent on CRGR reviews by individual CRGR members.) The Committee noted specifically, in adopting these measures, that they do not reduce the scope of CRGR review.

CHARTER

COMMITTEE TO REVIEW GENERIC REQUIREMENTS

Revision ~~5~~ 6
Draft

ATTACHMENT 4A

Revision 6
Draft

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REVISION 6 APPROVED BY THE COMMISSION ( )

I. PURPOSE

The Committee to Review Generic Requirements (CRGR) has the responsibility to review and recommend to the Executive Director for Operations (EDO) approval or disapproval of requirements or staff positions to be imposed by the NRC staff on one or more classes of power reactors. In addition, on a one-year trial basis, the Committee will review selected nuclear materials items at the recommendation of the Director, NMSS or at the EDO's request. ~~This~~ The CRGR review applies to staff proposals of requirements or positions which reduce existing requirements or positions and proposals which increase or change requirements. The implementation of this responsibility shall be conducted in such a manner so as to assure that, for power reactors, the provisions of 10 CFR 2.204, 10 CFR 50.109 and 10 CFR 50.54(f) as pertaining to generic requirements and staff positions are implemented by the staff. For proposed actions pertaining specifically to nuclear materials related activities, implementation shall assure that proposed new generic requirements and staff positions are justified by appropriate regulatory analyses in accordance with the NRC Regulatory Analysis Guidelines (NUREG/CR-0058). The objectives of the CRGR process are to help implement the Commission's Principles of Good Regulation - specifically to eliminate or remove any unnecessary burdens placed on licensees, reduce the exposure of workers to radiation in implementing some of these requirements, and conserve NRC resources while at the same time assuring the adequate protection of the public health and safety and furthering the review of new, cost-effective requirements and staff positions. The CRGR review and the associated staff procedures will assure NRC staff implementation of 10 CFR 50.54(f) and 50.109 for generic backfit matters. The overall process[1] will assure that requirements and positions to be issued (a) do in fact contribute effectively and significantly to the health and safety of the public, and (b) do lead to utilization of both NRC and licensee resources in as optimal a fashion as possible in the overall

[1]See Attachment 1.

achievement of protection of public health and safety. By having the Committee submit recommendations directly to the EDO, a single agency-wide point of control will be provided.

The CRGR will focus primarily on proposed new requirements and staff positions,[2] but it may also review selected existing requirements and staff positions which may place unnecessary burdens on licensee or agency resources. In reaching its recommendation, the CRGR shall consult with the proposing office to ensure that the reasons for the proposed requirement or staff position are well understood, and (a) for power reactors, that the applicable provisions of 10 CFR 50.109, 50.54(f), and 10 CFR 2.204, ~~if applicable~~, are appropriately addressed by the staff proposal; or (b) for nuclear materials related activities, that the applicable provisions of the NRC Regulatory Analysis Guidelines are addressed by the staff proposal. The CRGR shall submit to the EDO a statement of its recommendations in accordance with IV.D below.

Tools used by the CRGR for scrutiny are expected to include cost-benefit analysis and (for power reactors) probabilistic risk assessment where data for its proper use are adequate. Therefore, to the extent possible, written staff justifications should make use of these evaluation techniques. The use of cost-benefit analyses and other tools should help to make it possible to determine which proposed requirements and staff positions have quantifiable safety significance, and/or readily-demonstrated significant safety benefit based on qualitative considerations . These may be distinguished from those proposed requirements and staff positions for which principally qualitative judgments must be the deciding factor.[3]

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[2]See Attachment 2.

[3]See Attachment 3 for guidance regarding consideration of qualitative factors.

The EDO may authorize deviations from this Charter when the EDO, after consulting with the CRGR Chairman, finds that such action is in the public interest and the deviation otherwise complies with applicable regulations including 10 CFR 2.204, 50.54(f) and 50.109. Such authorization shall be written and shall become a part of the record of CRGR actions.

A rulemaking proposal presented to and considered by the CRGR, and ultimately, if presented to the Commission, should include any necessary exemption request with supporting reasons for the proposed exemption.

II. MEMBERSHIP

This Committee shall be chaired by the ~~Office~~ Director, AEOD, and it shall consist of, in addition to the CRGR Chairman, one individual each from NRR, NMSS, one of the Regions, and RES appointed by the Executive Director for Operations, and one individual from OGC appointed by the EDO with the concurrence of the General Counsel. The regional individual shall be selected from one of the regional offices, and this assignment shall be on a rotational basis, with a new selection made by the appointing official after that official judges that sufficient experience has been gained by the incumbent regional representative. The CRGR Chairman shall assure that process controls for overall agency management of the generic backfit process are developed and maintained. These process controls shall include specific procedures, training, progress monitoring systems, and provision for obtaining and evaluating both staff and industry views on the conduct of the backfit process. The CRGR Chairman is also responsible for assuring that each licensee is informed of the existence and structure of the NRC program described in this Charter. The CRGR Chairman shall assure that substantive changes in the Charter are communicated to all licensees.

AEOD will provide staff support. The Committee may use several non-NRC persons as consultants in special technical areas.

New members will be appointed as the need arises. If a member cannot attend a meeting of the CRGR, the applicable office may propose an alternate for the CRGR Chairman's approval. It is the responsibility of the alternate member to be fully versed on the agenda items before the Committee.

III. CRGR SCOPE

A. The CRGR shall consider all proposed new or amended generic requirements and staff positions to be imposed[4] by the NRC staff on one or more classes of power reactors.[5] These include:

(i) All staff papers which propose the adoption of rules or policy statements affecting power reactors or modifying any other rule so as to affect requirements or staff positions applicable to reactor licensees, including information required of reactor licensees or applicants for reactor licenses or construction permits.

(ii) All staff papers proposing new or revised rules of the type described in paragraph (i), including Advance Notices.

(iii) All proposed new or revised regulatory guides; all proposed new or revised Standard Review Plan (SRP) sections; all proposed new or

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[4]Legally, a staff position would not be imposed until the point at which conformance is required, for example, by a rule or an order. Documents such as bulletins and generic letters do not require compliance with staff positions; licensees are free to respond with alternative proposals. Regardless, such documents and positions are to be reviewed by CRGR.

[5]However, involvement of the CRGR in standard plant reviews being conducted under 10 CFR Part 52 is not necessary because the Commission and the EDO's office have participated closely in those reviews. (Memorandum for the Chairman and Commissioners from J. M. Taylor, dtd. October 24, 1991, Subject: Deviation from CRGR Charter for Standard Plant Reviews.)

revised branch technical positions; all proposed generic letters; all multiplant orders, show cause orders, and 50.54(f) letters; all bulletins and circulares; and USI NUREGs; and all new or revised Standard Technical Specifications.

In addition, the Committee will review selected nuclear material issues and proposed new materials-related requirements and staff positions at the recommendation of the Director, NMSS or at the EDO's request.

All staff proposed generic information requests directed to power reactor licensees will be examined by the CRGR in accordance with 10 CFR 50.54(f). Except for information sought to verify licensee compliance with the current licensing basis for a facility, the staff must prepare the reason or reasons for each information request prior to issuance to ensure that the burden to be imposed on respondents is justified in view of the potential safety significance of the issue to be addressed in the requested information. CRGR examination of generic letters will include those letters proposed to be sent to construction permit holders. For those plants for which an operating license is not yet issued, an exception to staff analysis may be granted by the Office Director only if the staff seeks information of a type routinely sought as part of the standard procedures applicable to the review of applications. If a request seeks to gather information pursuant to development of a new staff position, then the exception does not apply and the reasons for the request must be prepared and approved prior to issuance of the request. When staff evaluations of the necessity for a request are required, the evaluation shall include at least the elements specified in IV.B(xi).

B. For power reactors, the CRGR shall consider all licenses, license amendments, approvals of Preliminary Design Approvals (PDAs) and Final Design Approval (FDAs), minutes of conferences with owners groups,

licensees or vendors, staff approval of topical reports, ~~information notices,~~ and all other documents, letters or communications of a generic nature which reflect or interpret NRC staff positions, unless such documents refer only to requirements or staff positions previously applicable to the affected licensees and approved by the appropriate officials.[6] The following are examples of approved staff positions previously applicable to affected licensees:

(i) positions or interpretations which are contained in regulations, policy statements, regulatory guides, the Standard Review Plan, branch technical positions, generic letters, orders, topical approvals, PDAs, FDAs, licenses and license amendments which have been promulgated prior to November 12, 1981.[7]

(ii) positions after November 12, 1981 which have been approved through this established generic review process.

C. For those rare instances where it is judged that an immediately effective action is required (10 CFR 50.109 (a)(6)), no prior review by the CRGR is necessary. However, the staff shall conduct a documented evaluation in accordance with IV.B.ix below. This evaluation may be conducted either before or after the action is taken and shall be subject to CRGR review. The CRGR Chairman should be notified by the Office Director originating the action.

Generally, the CRGR should review immediately effective actions promptly after issuance; the review should focus primarily on the appropriateness

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[6]See footnote 5 ~~on page 6~~.

[7]Any document or communication of this type shall cite and accurately state the position as reflected in a previously promulgated regulation, order, Regulatory Guide, SRP, etc.

of treating the action on an urgent basis and on identification of any issues requiring EDO attention. The staff need not provide a written CRGR review package but should be prepared to address, at the meeting, the appropriate items from Section IV.B of this Charter. Immediately effective ~~requirements~~ actions will be included in the CRGR monthly report to the Commission.

D. For each proposed requirement or staff position not requiring immediately effective action, the proposing office is to identify the requirement as either Category 1 or 2.

Category 1 requirements and staff positions are those which the proposing office rates as urgent to overcome a safety problem requiring immediate resolution or to comply with a legal requirement for immediate or near-term compliance. Category 1 items are expected to be infrequent and few in number, and they are to be reviewed or otherwise dealt with within 2-working days of receipt by the CRGR. If the appropriateness of designation as Category 1 is questioned by the CRGR Chairman, and if the question is not resolved within the 2 working-day limit, the proposed requirement or staff position is to be forwarded by the CRGR Chairman to the EDO for decision.

Category 2 requirements and staff positions are those which do not meet the criteria for designation as Category 1. These are to be scrutinized ~~carefully~~ by the CRGR on the basis of written justification, which must be submitted by the proposing office along with the proposed requirement or staff position.

E. The CRGR may receive early briefings from the offices on proposed new generic requirements or staff positions before the staff has developed the requirements or positions and held discussions with the ACRS or ACNW.

F. The CRGR may be consulted on any issue deemed appropriate by the CRGR Chairman.

IV. CRGR OPERATING PROCEDURES

A. Meeting Notices

Meetings will generally be held at regular intervals and will be scheduled well in advance. Meeting notices will generally be issued by the CRGR Chairman 2 weeks in advance of each meeting, except for Category 1 items, with available background material on each item to be considered by the Committee.

B. Contents of Packages submitted to CRGR

The following requirements apply for proposals to reduce existing requirements or positions as well as proposals to increase requirements or positions. Each package submitted to the CRGR for review shall include fifteen (15) copies of the following information:

(i) The proposed generic requirement or staff position as it is proposed to be sent out to licensees. Where the objective or intended result of a proposed generic requirement or staff position can be achieved by setting a readily quantifiable standard that has an unambiguous relationship to a readily measurable quantity and is enforceable, the proposed requirement should merely specify the objective or result to be attained, rather than prescribing to the licensee how the objective or result is to be attained.

(ii) Draft staff papers or other underlying staff documents supporting the requirements or staff positions. (A copy of all materials referenced in the document shall be made available upon request to the CRGR staff. Any Committee member may request CRGR staff to obtain a copy of any reference material for his or her use.)

(iii) Each proposed requirement or staff position shall contain the sponsoring office's position as to whether the proposal would increase requirements or staff positions, implement existing requirements or staff positions, or would relax or reduce existing requirements or staff positions.

(iv) The proposed method of implementation, along with the concurrence (and any comments) of OGC on the method proposed, and the concurrence of affected program offices or an explanation of any non-concurrences.

(v) Regulatory analyses generally conforming to the directives and guidance of NUREG/BR-0058 and NUREG/CR-3568, as applicable.[8] (This does not apply for backfits that ensure compliance or ensure, define or redefine adequate protection. In ~~these~~ such cases, for power reactors, a documented evaluation is required as discussed in IV.B.(ix). For nuclear materials facilities/ activities, there is no rule requirement for such an evaluation; but, for the purpose of CRGR review, a similar documented

[8]The Commission is currently considering changes to the existing Regulatory Analysis Guidelines. Proposed Revision 2 to NUREG/BR-0058 is discussed in detail in SECY-93-167; it was noticed for public comment on September 7, 1993 (58FR47159). Proposed final Revision 2 to NUREG/BR-0058, which includes staff's evaluation of public comments received, is discussed in detail in SECY-95-028. The CRGR Charter will be revised, as appropriate, to reflect changes to the NUREG approved finally by the Commission.

evaluation should be provided by the staff as part of the review package.)

(vi) Identification of the category of reactor plants or nuclear materials facilities/activities to which the generic requirement or staff position is to apply (that is, whether it is to apply to new plants only, new OLs only, OLs after a certain date, OLs before a certain date, all OLs, license renewals, all plants under construction, all plants, all water reactors, all PWRs only, some vendor types, some vintage types such as BWR 6 and 4, jet pump and nonjet pump plants, etc.).

(vii) For power reactor backfits other than compliance or adequate protection backfits, a backfit analysis as defined in 10 CFR 50.109.[9] [10] [11]. The backfit analysis shall include, for each

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[9]As a legal matter, the backfit rule does not strictly apply unless a backfit is to be required by, for example, a rule or an order. However, the NRC backfit process, including the CRGR Charter, is defined on the principle that new positions, as well as new requirements, are to be reviewed for backfitting considerations and, if appropriate, meet the standards of the backfit rule before they are issued to the licensee(s). New generic positions in documents, such as generic letters, bulletins, and regulatory guides, whether affecting power reactors or nuclear materials facilities/activities, are to be considered and justified as backfits before they are issued.

[10]Types of actions to which the standards of the backfit rule do not apply include: (1) voluntary actions (2) actions mandated by statute and (3) requests for information. (See NUREG-1409, Backfitting Guidelines, July 1990, Section 2.1.1 for further discussion.)

[11]Reporting requirements, such as those contained in 10 CFR 50.72 and 10 CFR 50.73 (for power reactors), or those contained in 10 CFR 50.50 and 10 CFR 70.52 (for nuclear materials activities), are more akin to the information requests covered under 10 CFR 50.54(f) than they are to the modifications covered under the backfit rule (10 CFR 50.109). They should be justified by evaluation against criteria similar to the analogous provision in 10 CFR 50.54(f), i.e., by demonstrating that the burden of reporting is justified in view of the potential safety benefits to be obtained from the information reported.

category of reactor plants, an evaluation which demonstrates how action should be prioritized and scheduled in light of other ongoing regulatory activities. The backfit analysis shall document for consideration information available concerning any of the following factors as may be appropriate and any other information relevant and material to the proposed action:

(a) Statement of the specific objectives that the proposed action is designated to achieve;

(b) General description of the activity that would be required by the license or applicant in order to complete the action;

(c) Potential change in the risk to the public from the accidental offsite release of radioactive material;

(d) Potential impact on radiological exposure of facility employees and other onsite workers.

(e) Installation and continuing costs associated with the action, including the cost of facility downtime or the cost of construction delay;

(f) The potential safety impact of changes in plant or operational complexity, including the relationship to proposed and existing regulatory requirements and staff positions;

(g) The estimated resource burden on the NRC associated with the proposed action and the availability of such resources;

(h) The potential impact of differences in facility type, design or age on the relevancy and practicality of the proposed action;

(i) Whether the proposed action is interim or final, and if interim, the justification for imposing the proposed action on an interim basis.

(j) For both rulemaking actions and proposed generic correspondence, staff evaluation of comments received as a result of the notice and comment process.[12]

(k) How the action should be prioritized and scheduled in light of other ongoing regulatory activities. The following information may be appropriate in this regard:

1. The proposed priority or schedule,
2. A summary of the current backlog of existing requirements awaiting implementation,
3. An assessment of whether implementation of existing requirements should be deferred as a result, and
4. Any other information that may be considered appropriate with regard to priority, schedule or

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[12]Generic communications which articulate a new staff position or seek additional licensee commitments affecting power reactors are generally noticed for comment. The Commission's instructions in this regard are documented in the following staff requirements memoranda: (1) Memorandum for J. M. Taylor from S. J. Chilk, dated October 27, 1992, Subject: SECY-92-338 - Implementing Procedures for Issuing Urgent Generic Communications, (2) Memorandum for J. M. Taylor from S. J. Chilk, dated July 17, 1992, Subject: SECY-92-224 - Revised Implementing Procedures for Issuance of Generic Communications and (3) Memorandum for J. M. Taylor from S. J. Chilk, dated December 20, 1991, Subject: SECY-91-172 -Regulatory Impact Survey.

cumulative impact. For example, could implementation be delayed pending public comment?

(viii) For each power reactor backfit analyzed pursuant to 10 CFR 50.109(a)(2) (i.e., not adequate protection backfits and not compliance backfits), the proposing office director's determination, together with the rationale for the determination based on the considerations of paragraphs (i) through (vii) above, that

(a) there is a substantial increase in the overall protection of public health and safety or the common defense and security to be derived from the proposal;[13,14] and

(b) the direct and indirect costs of implementation, for the facilities affected, are justified in view of this increased protection.

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[13]Attachment 3 to this Charter provides additional guidance on consideration of qualitative factors in applying the "substantial increase" standard of 10 CFR 50.59 for actions affecting power reactors. (By its terms, 10 CFR 50.109 does not apply to nuclear material facilities/activities that are not licensed under Part 50; but much of the guidance in Attachment 3 is applicable, and should be considered by the staff, in evaluating qualitative factors that may contribute to the justification of proposed backfitting actions directed to nuclear materials facilities/activities.)

[14]There may be proposed ~~rules~~ actions affecting power reactors which do not meet the "substantial increase" standard but, in the staffs judgment, should be promulgated nonetheless. The Commission has indicated the willingness to consider such exceptions to the Backfit Rule on a case-by-case basis; but such exceptions would be promulgated only if the proposal (not to apply the Backfit Rule to the proposed ~~rulemaking~~ action) is made the subject of notice and comment. Such a ~~rulemaking~~ proposal presented to CRGR, for presentation ultimately to the Commission for consideration, should include any necessary request for exemption from the applicable provisions of 10 CFR 50.109, with supporting reasons for the proposed exemption.

NOTE: Although, as a legal matter, 10 CFR 50.109 does not apply to nuclear materials facilities/activities that are not licensed under Part 50, the guidance referred to in footnote 13 (regarding qualitative factors that can contribute to justification for proposed backfitting) does apply to the evaluation of proposed backfits affecting the selected nuclear facilities/activities items submitted to CRGR for review.

(ix) For adequate protection or compliance backfits affecting power reactors, evaluated pursuant to 10 CFR 50.109(a)(4),

(a) a documented evaluation consisting of:
  (1) the objectives of the modification
  (2) the reasons for the modification
  (3) The basis for invoking the compliance or adequate protection exemption.

(b) In addition, for actions that were immediately effective (and therefore issued without prior CRGR review as discussed in III.C) the evaluation shall document the safety significance and appropriateness of the action taken and (if applicable) consideration of how costs contributed to selecting the solution among various acceptable alternatives.

(x) For each evaluation conducted for proposed relaxations or decreases in current requirements or staff positions, whether affecting power reactors or nuclear materials facilities/activities, the proposing office director's determination, together with the rationale for the

determination based on the considerations of paragraphs (i) through (vii) above, that

(a) the public health and safety and the common defense and security would be adequately protected if the proposed reduction in requirements or positions were implemented, and

(b) the cost savings attributed to the action would be substantial enough to justify taking the action.

(xi) For each request for information from power reactor licensees under 10 CFR 50.54(f) (which is not subject to exception as discussed in III.A) an evaluation that includes at least the following elements:

(a) A problem statement that describes the need for the information in terms of potential safety benefit.

(b) The licensee actions required and the cost to develop a response to the information request.

(c) An anticipated schedule for NRC use of the information.

(d) A statement affirming that the request does not impose new requirements on the licensee, other than for the requested information.

(e) The proposing office director's determination that the burden to be imposed on the respondents is justified

in view of the potential safety significance of the issue to be addressed in the requested information.

An analogous evaluation addressing items (a) through (e) above should also be provided for each information request directed to the licensees of nuclear materials facilities/ activities.

(xii) For ~~proposed backfits~~ each power reactor backfit analyzed pursuant to 10 CFR 50.109 (a)(2) (i.e., not adequate protection or compliance backfits), an assessment of how the proposed action relates to the Commission's Safety Goal Policy Statement.[15]

C. CRGR Staff Review

CRGR staff shall review each package. If the package is not sufficient for CRGR consideration, it may be returned by the CRGR Chairman to the originating office with reasons for such action. Prior notice to the

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[15]The Policy Statement was published in the Federal Register , Vol. 51, No. 162, page 30028 on August 21, 1986. The Commission directed the staff to develop procedures and begin implementing the statement in a memorandum for J.M. Taylor from S.J. Chilk, dated June 15, 1990. The EDO directed the CRGR to incorporate considerations regarding safety goals into its deliberations in a memorandum for E.L. Jordan from J.M. Taylor, dated July 10, 1990.

Specific procedures for addressing safety goals are being developed; the most recent draft guidance is contained in the proposed final Revision 2 to NUREG/BR-0058, "Regulatory Analysis Guidelines", which has been forwarded to the Commission for final review. A detailed discussion of proposed final Revision 2, including staff's evaluation of public comments on the proposed changes to the guidance, is provided in SECY-95-028. The CRGR Charter will be revised, as appropriate, to reflect changes to the NUREG that are approved by the Commission.

Committee is not needed; however, CRGR members shall be informed of such actions.

- In deciding whether a package should be returned and in scheduling its review, due consideration shall be given to the EDO's priorities and schedules for completion of work and resolution of issues.

- An accepted package shall be scheduled for CRGR consideration; however, scheduling priorities shall be at the discretion of the CRGR Chairman.

- All requests for particular scheduling shall be made to the CRGR Chairman by the sponsoring office director (or identified designate).

- The CRGR staff may obtain additional information from industry and consultants on such proposals, particularly with respect to the cost of implementation, realistic schedule for implementation and the ability of licensees to safely and efficiently carry out the full range of safety-related activities at each facility while implementing the proposed requirement or staff position. The CRGR staff should normally provide a brief summary analysis of each package to CRGR members prior to the meetings.

D. CRGR Meeting Minutes

At each meeting, for each package scheduled for discussion, the sponsoring office shall present to the CRGR the proposed generic requirement or staff position and respond to comments and questions. A reasonable amount of time, within the discretion of the CRGR Chairman, shall be permitted for discussion of each item by Committee members. At

the conclusion of the discussion, each Committee member shall summarize his or her position. The minutes of each meeting, including CRGR recommendations and the bases therefor, shall be prepared. Minutes normally shall be circulated to all members within 10 working days after the meeting, and each member shall have 5-working days to comment in writing on the minutes. It is the responsibility of each member to assure that the minutes accurately reflect his or her views. All comments received shall be appended to or made part of the minutes of the meeting.

The Committee shall recommend to the EDO, approval, disapproval, modification, or conditioning of generic proposals considered by the Committee, as well as the method of implementation for such requirements or staff positions and appropriate scheduling for such implementation, which shall give consideration to the ability of licensees to safely and efficiently carry out the entire range of safety-related activities at each facility. For issues affecting power reactors, the minutes shall give an accurate description of the basis for the recommendations; shall relate this basis, as appropriate, to 10 CFR 50.109, 10 CFR 50.54(f) and 10 CFR 2.204 (as discussed in I) and the Commission's Safety Goals Policy (as discussed in IV.B (ix); and shall accurately reflect the consensus decision of the Committee.[16] For issues affecting nuclear material facilities/activities, the minutes shall provide similar detail, except the basis for CRGR recommendations shall be related, as appropriate, to analogous provisions/criteria of NUREG/BR-0058 and NUREG/CR-3568, as indicated in IV.B.(v); to the provisions of IV.B.(x); to the applicable provisions of IV.B.(xi); and to 10 CFR 2.204. Copies

[16]The minutes should include a clear indication as to whether an action was considered to be justified as a backfit and, if so, whether it was considered to be: (1) an adequate protection exception; (2) a compliance exception; or (3) a ~~cost-justified~~ substantial safety enhancement for which the associated costs of inplementation are justified in view of the safety benefits to be realized. Also, see footnote 9.

of these minutes shall be distributed to the Commission, Office Directors, Regional Administrators, CRGR Members, and the Public Document Room. The EDO's action taken in response to the Committee's recommendations shall be provided in writing to the Commission.

E. RECORDKEEPING SYSTEM

The CRGR staff will assure that there is an archival system for keeping records of all packages submitted to the CRGR Chairman, actions by the staff, summary minutes of CRGR consideration of each package including corrections, recommendations by the Committee, and decisions by the EDO and the Commission.

V. REPORTING REQUIREMENTS

The CRGR staff shall prepare a report to be submitted by the EDO to the Commission each month. The report will provide a brief summary of CRGR activities. The report shall be included in the Weekly Items of Interest report to the EDO at the end of each month.

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Attachment 1 to
CRGR Charter

NEW GENERIC REQUIREMENT AND STAFF POSITION REVIEW PROCESS

The attached chart is a schematic representation of how new generic requirements and staff positions are developed, revised and implemented.

In the early stages of developing a proposed new requirement or staff position, it is contemplated that the staff may have discussions with the industry, ACRS, ACNW, and the public to obtain preliminary information of the costs and safety benefits of the proposed action. On the basis of this information, the proposing office will prepare the package for CRGR review.

The CRGR may recommend approval, revision, or disapproval or that further public comment be sought. After CRGR and EDO approval, there may be further review by the ACRS, ACNW, or the Commission. Decisions by the Commission are controlling.

INSERT FIGURE

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Attachment 2 to
CRGR Charter

PROCEDURES TO CONTROL COMMUNICATION OF GENERIC REQUIREMENTS AND STAFF POSITIONS TO LICENSEES

A. Background

In a memorandum from the Chairman to the Executive Director for Operations dated October 8, 1981, the Commission expressed concern over conflicting or inconsistent directives and requests to reactor licensees from various components of the NRC staff. By that memorandum, the Commission outlined certain recommended actions to establish control over the number and nature of requirements placed by NRC on reactor licensees. These included: establishing a Committee to Review Generic Requirements (CRGR); establishing a new position of Deputy Executive Director for Regional Operations and Generic Requirements (DEDROGR); conducting a survey of formal and informal mechanism to communicate with reactor licensees; and developing and implementing procedures for controlling communications involving significant requirements covering one or more classes of power reactors. In February 1987 the Commission approved a NRC reorganization that, among other changes, placed the CRGR operations under the Office for Analysis and Evaluation of Operational Data (AEOD). CRGR responsibilities and authorities were not directed to change under the new organizational structure; only organizational location was changed. However, subsequently, the Commission approved the expansion of the CRGR review scope, on a trial basis, to include selected issues/items in the nuclear materials area at the recommendation of the Director, NMSS or request of the EDO. The following procedures have been established for controlling generic requirements or staff positions and are designed to implement provisions of 10 CFR 50.109, 50.54(f) and 2.204, and analogous control mechanisms for evaluation of proposed backfitting actions that affect nuclear materials facilities/activities as reflected in III.A, IV.B, and IV.D.

B. Committee to Review Generic Requirements (CRGR)

Except for immediately effective actions, the CRGR shall review all proposed new generic requirements and staff positions to be imposed on one or more classes of power reactors or selected nuclear materials facilities/activities (as indicated in III.A), in accordance with the Charter of the Committee, before such proposed requirements or staff positions are forwarded to the EDO and Commission and imposed on, or communicated for use or guidance to, any ~~reactor licensee~~ licensee of a power reactor or selected nuclear material facility/activity (as indicated in III.A).

C. Office Responsibility

Each office shall develop appropriate internal procedures to assure that the following policy requirements regarding licensees are carried out:

(1) All proposed generic requirements and staff positions with a direct or indirect impact on power reactors, or selected nuclear materials facilities/activities (as indicated in III.A), shall be submitted for CRGR consideration. Table I (attached) provides examples.

(2) All generic documents, letters and communications that establish, reflect or interpret NRC staff positions or requirements to be imposed on power reactors or selected nuclear materials facilities/activities (as indicated in III.A). Table II (attached) provides examples. These documents shall be submitted for review by CRGR unless these documents refer only to requirements or staff positions approved prior to November 12, 1981. In the latter case, the previously approved requirement or staff position should be specifically cited and accurately stated. Offices should be careful to review new or specific

interpretations to assure that they are only case-specific applications of existing requirements rather than initial applications having potential generic use. Case-specific applications are governed by NRC ~~Manual Chapter 0514~~ Management Directive 8.4.

(3) For all other communications with licensees (Table III, attached), no statements shall be used that might suggest new or revised generic requirements, staff positions, guidance or recommendations unless such statements have been approved by the EDO or the Commission.

(4) In developing a proposed new generic requirement or staff position for CRGR review, an office may determine that it is in possession of important safety information that should be made available to licensees. It is the responsibility of that office to take immediate action to assure that such information is communicated to the licensees by the appropriate office. Such actions may be taken before completion of any proposed or ongoing CRGR reviews.

D. Immediately Effective Action (Power reactors only)

For those rare instances where it is judged that an immediate effective action is required (10 CFR 50.109(a)(6)), no prior review by the CRGR is necessary. However, the staff shall conduct a documented evaluation which includes a statement of the objectives of and reasons for the actions and the basis for invoking the exception. The evaluation may be conducted either before or after the action is taken and shall be subject to CRGR review. The evaluation shall also document the safety significance and appropriateness of the action taken and consideration of how costs contribute to selecting the solution among various acceptable alternatives. The CRGR Chairman should be notified by the Office Director originating the action. These immediately effective requirements will be included in the monthly report to the Commission.

TABLE 1

PRINCIPAL MECHANISMS USED BY NRC STAFF TO
ESTABLISH OR COMMUNICATE GENERIC REQUIREMENTS AND STAFF POSITIONS
[See paragraph C.(1)]

Rulemaking[1]

Advanced Notices
Proposed Rules
Final Rules
Policy Statements[2]

Other Formal Requirements[3]

Multiplant orders including show cause orders and
confirmatory orders

Staff Positions[4]

Bulletins
Generic letters (including 10 CFR 50.54f information requests)
Regulatory Guides
SRP (including Branch Technical Positions)
Standard Tech Specs
USI NUREGs

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[1]While Rulemaking is an action of the Commission rather than the staff, most rules are proposed by or prepared by the staff.

[2]A Policy Statement does not impose a legal requirement, as does a rule, order, or license condition.

[3]The document itself imposes a legal requirement; e.g., regulatory orders or license conditions.

[4]Documents that reflect staff positions which, unless complied with or a satisfactory alternative offered, the staff would impose or seek to have imposed by formal requirement.

TABLE II

MECHANISMS SOMETIMES USED TO INTERPRET
GENERIC REQUIREMENTS OR STAFF POSITIONS
[See paragraph C.(2)]

Action on Petitions for Rulemaking

Action on 10 CFR 2.206 Requests

Approval on Topical Reports

Facility Licenses and Amendments

SERs

FDAs, PDAs

NUREG Reports (other than USIs)

Operator Licenses and Amendments

Single Plant Orders

Staff Positions on Code Committees

Unresolved Issues Resulting from Inspections

TABLE III

MECHANISMS THAT SHOULD NOT BE USED TO
COMMUNICATE GENERIC REQUIREMENTS OR STAFF POSITIONS
[See paragraph C.(3)]

Administrative Letters

DES & FES

Entry, Exit and Management Meetings

Information Notices

Inspection Manual (Including Temporary Instructions)

Licensee Event Reports; Construction Deficiency Reports
(Sent to Other Licensees)

NRC Staff Contact with Licensees in Operator Qualification/Requalification Process

Phone Calls or Site Visits by NRC Staff or Commission to Obtain Information (i.e., Corrective Actions, Schedules, Conduct Surveys, etc.)

Pleadings

Preliminary Notifications

Press Releases

Proposed Findings

Public Meetings, Workshops, Technical Discussions

Resident Inspector Day-to-Day Contact

SALP Reports

SECY Paper (Some Utilities Apparently Sent Operators to College Based on Recent SECY Paper on Operator Qualifications)

Special Reports

Speeches to Local Groups or Industry Associations

TABLE III (cont)

Technical Specifications

Telephone Calls and Meetings with Licensees, Vendors, Industry Representatives, Owners Groups

Testimony

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Attachment 3 to
the CRGR Charter

GUIDANCE ON APPLICATION OF THE "SUBSTANTIAL INCREASE" STANDARD

The Backfit Rule states that, aside from exceptions for cases of adequate protection or compliance, the Commission shall require the backfitting of a facility only when it determines, based on a backfit analysis, "that there is a substantial increase in the overall protection of the public health and safety or the common defense and security to be derived from the backfit and that the direct and indirect costs of implementation for that facility are justified in view of this increased protection"[1]

The Commission's Regulatory Analysis Guidelines are intended to be a primary source of guidance on application of the "substantial increase" standard as well as application of the Commission's safety goals.[2]

Generally, the staff should quantify the benefits of a proposed backfit to the extent feasible. With regard to cases where the safety benefits of a backfit cannot be quantified, or can only be partially quantified, a flexible approach is warranted.

In the preamble to the 1985 backfit rule the Commission said:

> Substantial means "important or significant in a large amount, extent, or degree." Under such a standard the Commission would not ordinarily expect that safety improvements would be required as backfits that result in an insignificant or small benefit to public health and safety or common defense and security, regardless of costs. On the other hand, the standard is not intended to be interpreted in a manner that would result in disapprovals of worthwhile safety or security improvements having costs that are justified in view of the increased protection that would be provided.[3]

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[1] 10CFR50.109(a)(3)

[2] The Commission is currently considering changes to the existing Regulatory Analysis Guidelines; proposed Revision 2 to NUREG/CR-0058 was noticed for public comment on September 7, 1993 (58FR47159). The proposed revision is discussed in detail in SECY-93-167. The CRGR Charter will be revised, as appropriate, to reflect changes to the NUREG approved by the Commission.

[3] 50 FR 38102, September 20, 1985.

In a 1993 memorandum to the staff the Commission said that it continues to believe that these words embody a sound approach to the "substantial increase" criterion and that this approach is flexible enough to allow for qualitative arguments that a given proposed rule would substantially increase safety.[4]

Examples of general areas where the benefits of new requirements have not been considered amendable to quantification and, therefore, qualitative arguments have been used, include the following:

1. Plant access control (10 CFR 73)
2. Fitness for duty (10 CFR 26)
3. Emergency Response Data System (10 CFR 50.72 and Appendix E.)

The Commission further said that the qualitative approach is also flexible enough to allow for arguments that consistency with national and international standards, or the incorporation of wide spread industry practices, contributes either directly or indirectly to a substantial increase in safety. Such arguments concerning consistency with other standards, or incorporation of industry practices, would have to rest on the particulars of a given proposed rule.[5]

Incorporation of industry standards into NRC rules or staff positions, as a prudent means of assuring continued conformance with currently voluntary standards and practices that provide substantial safety benefit, can provide the basis for a finding that a proposed backfit meets the "substantial increase" standard of 10 CFR 50.109.

In addition factors such as the following may be argued to contribute directly or indirectly to a substantial increase in safety, depending on the particulars of a given proposed backfit.

1. Incorporation of advances in science and technology.
2. Greater uniformity of practice.
3. Greater flexibility in practice/less prescriptive requirements.
4. Greater specifity in existing generally-stated requirements.
5. Correction of significant flaws in current requirements.
6. Greater confidence in the reliability and timeliness of information or programs.

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[4] Memorandum to James M. Taylor and William C. Parler from Samuel J. Chilk, dated June 30, 1993, Subject: SECY-93-086, Backfit Considerations.

[5] See footnote 4.

7. Fewer exemption requests and interpretive debates.
8. Better focusing of corrective actions towards the sources of problems.
9. Benefits that may accrue in the longer term, beyond the immediately apparent effects of the backfit.