



Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

AFFIRMATION SESSION 81-40

(Open to Public Attendance)

Thursday, October 29, 1981

Pages 1 - 6

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

AFFIRMATION SESSION 81-40
(Open to Public Attendance)

Commissioners' Conference Room
1717 H Street, N.W.
Washington, D. C.

Thursday, October 29, 1981

The Commission met, pursuant to notice, at 2:40 p.m.,
Nunzio J. Palladino, Chairman of the Commission, presiding.

PRESENT:

- Chairman Palladino
- Commissioner Gilirsky
- Commissioner Bradford
- Commissioner Ahearne
- Commissioner Roberts

ALSO PRESENT:

- S. Chilk, Secretary
- L. Bickwit, General Counsel
- S. Trubatch, OGC
- A. Bates, Office of the Secretary

DISCLAIMER

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The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determinations or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of or addressed to any statement or argument contained herein, except as the Commission may authorize.

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CHAIRMAN PALLADINO: The meeting will please come to order. This is an affirmation/discussion session and I will ask the Secretary to walk us through the items listed on the agenda.

MR. CHILK: The first paper is SECY-81-245A, Interim Amendments to 10 CFR Part 50 related to hydrogen control.

The Commission is being asked to approve a final rule here, which would require inerted atmospheres for BWR Mark I and Mark II containments and hydrogen recombiner capability for LWR's that rely upon purge/repressurization systems as a primary means of hydrogen control.

The Chairman, Commissioners Bradford, Ahearne and Roberts have approved the final rule as contained in SECY-81-245A, and as modified in memorandum from the EDO on October the 7th and the 14th.

Commissioner Gilinsky has not yet voted, but I understand he is prepared to vote at the table, and to approve the rule with language changes.

CHAIRMAN PALLADINO: Well, I suggest we give Commissioner Gilinsky a chance to make his observations.

COMMISSIONER GILINSKY: Yes. I didn't want to suggest specific changes now.

CHAIRMAN PALLADINO: Oh, I see.

COMMISSIONER GILINSKY: I would like to have a short

1 time to make them. I don't know whether you want to go
2 ahead today or not. We could either not go ahead. I rather
3 thought that ---

4 COMMISSIONER AHEARNE: I would like to make a
5 point. I would refer to have a final rule in front of us
6 that we are going to vote on, in any event. In this
7 particular case, although changes are described still,
8 unless there is a pressing urgency to move ahead on a given
9 time, I would prefer to have the final document that we are
10 going to vote on.

11 COMMISSIONER GILINSKY: Yes, in clean form.

12 COMMISSIONER AHEARNE: Yes. So if you -- Vic, do
13 you think you could get those changes in the next couple of
14 days?

15 COMMISSIONER GILINSKY: Oh, yes.

16 COMMISSIONER AHEARNE: Because then, perhaps we
17 could put it over until next week and then have the final
18 document.

19 CHAIRMAN PALLADINO: I'm not sure of any urgency
20 that would not allow us to go until next week. Does any of
21 the staff have any feeling on that?

22 (No response)

23 CHAIRMAN PALLADINO: Well, then, why don't we hold
24 off our votes until ---

25 COMMISSIONER AHEARNE: Could I ask ---

COMMISSIONER GILINSKY: Yes, none of this goes to any

1 of the basic features of the rule, which seems to me to be
2 okay.

3 COMMISSIONER AHEARNE: Can I ask another question:
4 I notice that the proposed rule is also being deferred. There
5 are some questions on equipment survivability. Is that
6 correct?

7 MR. CHILK: Yes, there are. Andy?

8 MR. BATES: I understand that Commissioner Bradford
9 and Chairman Palladino both had still some questions with
10 regard to equipment survivability and the difference between
11 that and equipment qualification as proposed in the rule.

12 CHAIRMAN PALLADINO: As what?

13 MR. BATES: As proposed in the rule, that it was
14 going to -- certain criteria on equipment survivability, and
15 I understood that this morning's meeting that was cancelled on
16 equipment qualification might have addressed some of those
17 questions.

18 CHAIRMAN PALLADINO: That is another reason why we
19 ought to hold ---

20 MR. CHILK: Well, we can separate those two.

21 COMMISSIONER AHEARNE: My question really was, since
22 I gather that it was, Joe you and Peter who had put a hold
23 on the other rule, what it was, that was going to be required
24 next to move that forward.

25 COMMISSIONER BRADFORD: Well, I need to -- for myself --
I can't speak for Joe -- just to formulate a position. My

1 concern is that while we may have to accept survivability as
2 a concept in the short run, I have a lot of problems with it
3 and would like to come out of whatever we do on survivability
4 in a posture that points us toward real qualification for that
5 equipment, and not be committed to accepting survivability as
6 a standard in the longer run.

7 CHAIRMAN PALLADINO: That's is the other part of this.
8 We were only voting on Enclosure C.

9 COMMISSIONER AHEARNE: But since this is an interim
10 rule, I agree with you that we ought to get to that posture,
11 but at least in my mind, it is not necessarily -- I don't
12 necessarily have to be able to reach a final position on the
13 qualification, and could embed survivability into this, since
14 it is an interim. I thought I understood that, and is that
15 also, Joe, your concern?

16 CHAIRMAN PALLADINO: Yes.

17 COMMISSIONER AHEARNE: Perhaps if we could get
18 that addressed by next week ---

19 CHAIRMAN PALLADINO: -- by next week, well, let's
20 give it a try. Anyhow I gather there is consensus not to
21 try to force a vote on this today.

22 MR. CHILK: The next one is SECY-81-604 -- Commission
23 Review of the Full Power Contentions in the Diablo Canyon,
24 where the Commission is being asked to address a request by
25 the joint intervenors for directed certification to the
Commission of the Licensing Board, rejection of their TMI

1 related full power contentions.

2 The Commission voted unanimously to deny the joint
3 intervenors request that the Commission undertake review of
4 the Licensing Board decision. Chairman Palladino,
5 Commissioners Gilinsky, Bradford and Ahearne, however, have
6 voted to direct the Appeal Board to take prompt interlocutory
7 review of the Licensing Board decision. Would you please
8 affirm your votes?

9 (Chorus of Ayes)

10 MR. CHILK: The third item deals with a memo from
11 the General Counsel on NFS -- request for a stay of and a
12 hearing on the license amendment to the West Valley license.
13 Is there to be a discussion on that?

14 CHAIRMAN PALLADINO: Yes, I would like to propose
15 that we discuss it for a few minutes, but I gather, since
16 this is an adjudicatory item, it should be discussed in a
17 closed session. So might I have a vote on closing this
18 session.

19 (Chorus of ayes.)

20 CHAIRMAN PALLADINO: All right, so we will close
21 this session.

22 (Whereupon, the Commission went into closed
23 session at 2:50 p.m.)
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25

NUCLEAR REGULATORY COMMISSION

10 CFR Part 50

Interim Requirements Related to Inerted Reactor Containments
and Hydrogen Recombiner Capability

AGENCY: Nuclear Regulatory Commission.

ACTION: Final Rule.

SUMMARY: The Nuclear Regulatory Commission is amending its regulations to require inerted containment atmospheres and additionally, hydrogen recombiner capability to reduce the likelihood of venting radioactive gases following an accident. The inerting requirement applies only to boiling water nuclear power reactors with either Mark I or Mark II type containments; the requirement for hydrogen recombiner capability applies to light-water nuclear power reactors that rely upon purge/repressurization systems as the primary means of hydrogen control.

EFFECTIVE DATE: [30 days following publication in the Federal Register]

FOR FURTHER INFORMATION CONTACT: Morton R. Fleishman, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, telephone 301-443-5981.

SUPPLEMENTARY INFORMATION: On October 2, 1980, the Nuclear Regulatory Commission published in the FEDERAL REGISTER (45 FR 65466) a notice of proposed rulemaking on "Interim Requirements Related to Hydrogen Control and Certain Degraded Core Considerations" (Interim Rule) inviting written comments or suggestions on the proposed rule by November 3, 1980. The

SECY-81-245A

Enclosure "C"

to provide a more detailed explanation of the requirements and to obtain industry comments. Based on the discussions at the meetings and other comments received, the NRC revised the requirements and notified the applicants, licensees and construction permit holders to this effect by a letter dated October 31, 1980. The letter and revised requirements are included in NUREG-0737, "Clarification of TMI Action Plan Requirements."¹

On May 13, 1981, the Commission published in the FEDERAL REGISTER (46 FR 26491) a notice of proposed rulemaking which proposed licensing requirements for pending operating license applications (OL Rule). The proposed OL Rule was based upon the requirements described in NUREG-0737 and includes, among others, many of the requirements originally included in the proposed Interim Rule published in October 1980.

Items originally proposed in the Interim Rule were:

1. Inerting of Mark I and II boiling water reactors (BWRs)
2. Design analyses for Mark III BWRs and pressurized water reactors (PWRs)
3. Dedicated hydrogen control penetrations
4. Hydrogen recombiner capability
5. High point vents
6. Post-accident protection of safety equipment and areas
7. In-plant iodine instrumentation
8. Post-accident sampling
9. Leakage integrity outside containment

¹Copies of this report may be obtained from GPO Sales Program, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

notice concerned proposed amendments to 10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities," to improve hydrogen management in light-water reactor facilities and to provide specific design and other requirements to mitigate the consequences of accidents resulting in a degraded reactor core.

Thirty-five persons submitted comments regarding the proposed amendments. Although the comment period was scheduled to expire on November 3, 1980, comments received subsequent to that date have been considered, with the latest comment letter being dated February 9, 1981. The comments are part of the public record and may be examined and copied in the Commission's Public Document Room at 1717 H Street NW., Washington, D.C. A summary of the comments along with a comment analysis and a value/impact assessment are also available for inspection and copying in the Public Document Room.

These comments have been carefully reviewed and evaluated during preparation of this final rule. The final rule contains revisions to the proposed rule that reflect these comments. The commenters were about equally divided between those in favor of and those opposed to publishing the interim amendments. Whether or not the commenter favored publishing a final rule, additional detailed comments were generally provided on specific aspects of the proposed amendments.

The NRC's Office of Nuclear Reactor Regulation sent a letter on September 5, 1980 to all nuclear power plant licensees, applicants and construction permit holders providing a "Preliminary Clarification of the TMI Action Plan Requirements." This was followed by a series of four regional meetings, noticed by publication in the FEDERAL REGISTER (45 FR 60508) and held during the week of September 22, 1980, in order

10. Accident monitoring instrumentation
11. Detection of inadequate core cooling
12. Training to mitigate degraded core accidents

Of the above list, all except items 1, 2 and 4 were included in the proposed OL Rule and have been appropriately revised to reflect the comments received during the comment period on the final Interim Rule. Hence, those items included in the OL Rule have been deleted from this Interim Rule. Furthermore, those public comments received pertaining to the OL Rule items will not be discussed here. They may be examined and copied in the Commission's Public Document Room along with the response to the comments (SECY 81-245, "Interim Amendments to 10 CFR Part 50 Related to Hydrogen Control and Certain Degraded Core Considerations").

The final Interim Rule contains revisions to the proposed Interim Rule that reflect all of the applicable comments including those (a) given in response to the notice of proposed rulemaking, and (b) generated during the regional meetings and in response to the clarification letters of September 5, 1980 and October 31, 1980.

Before discussing the comments and the specific revisions resulting from the comments, it should be noted that, while § 50.44 has applied only to light-water nuclear power reactors with zircaloy fuel cladding, the new amendments in the Interim Rule are not as limited and apply to light-water nuclear power reactors with either stainless steel or zircaloy fuel cladding. The Commission will be considering further modification of §50.44 during the long-term rulemaking effort relative to consideration of degraded or melted cores in safety regulation. Part of this long-term rulemaking will involve a thorough reevaluation of hydrogen generation and control. In the interim, the Commission wishes

to leave in place the existing provisions of §50.44 because of its requirements for dealing with design basis accidents. These include, for example, requiring:

1. The capability for measuring hydrogen concentrations in containment.
2. The capability for ensuring a mixed atmosphere in containment.
3. The capability for controlling combustible gas concentrations in containment following a postulated LOCA.
4. The capability to deal with hydrogen from radiolytic decomposition of the reactor coolant and the corrosion of metals. These have release characteristics that differ from those associated with metal-water reaction.
5. That the combustible gas control systems conform with the general requirements of Criteria 41, 42 and 43 of Appendix A of 10 CFR Part 50.

Several commenters have expressed concern that the various rule-makings currently being pursued by NRC should be integrated, i.e., safety goal, degraded core considerations, minimum engineered safety features, siting and emergency planning. The NRC shares this concern. On October 15, 1980 the Executive Director for Operations established a Degraded Cooling Steering Group to coordinate degraded cooling and related rules. This group has completed its work and prepared a plan to ensure future integration of these activities.

Numerous commenters have questioned many of the implementation dates specified in the rule, indicating that they cannot be met for a variety of reasons, such as procurement lead time, need for the design studies,

availability of acceptable equipment, etc. The staff agrees with these comments and has made appropriate changes to the implementation dates.

INERTING OF MARK I & II BWRs [§ 50.44(c)(3)(i)]

Some commenters, particularly those associated with Mark I boiling water reactors (BWRs), questioned the advisability of requiring inerting of containments and suggested that other hydrogen control options be permitted. This issue has been extensively reviewed and discussed among the Commission, NRC staff and industry participants. Numerous reports and letters have been written and many meetings held in order to thoroughly air the issue. Considering the information previously developed, the Commission continues to believe that it would be prudent, pending completion of the long term rulemaking on degraded core cooling, to require that all Mark I and II BWR containments be provided with an inerted atmosphere during normal operations.

The proposed rule's deadline for installation of inerting systems has been extended to account for delay in publication of a final rule. The rule has also been changed to clarify that the paragraph applies only to Mark I and II BWRs.

HYDROGEN RECOMBINER CAPABILITY [§ 50.44(c)(3)(ii)]

Several commenters have recommended that § 50.44(c)(3)(ii) be modified to allow the use of alternate means of hydrogen control, such as internal recombiners, rather than restrict the rule to external recombiners. The proposed rule was not intended to preclude this alternative.

In fact, if internal recombiners were present before or will be installed in the future, this section of the rule would not apply since purge/repressurization systems would not be the primary means for combustible gas control. This section of the rule only applies to facilities that rely upon purge/repressurization systems as the primary means of controlling combustible gases following a LOCA. It should also be noted that this section of the rule does not require actual installation of external recombiners, rather, it requires only the capability for installation. To avoid confusion, the rule has been clarified to indicate that internal recombiners are an acceptable alternative to the installation of external recombiner capability.

REGULATORY FLEXIBILITY ACT

In accordance with the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission hereby certifies that this rule will not, if promulgated, have a significant economic impact on a substantial number of small entities. This rule affects only the licensing and operation of nuclear power plants. The companies that own these plants do not fall within the scope of the definition of "small entities" set forth in the Regulatory Flexibility Act or the Small Business Size Standards set out in regulations issued by the Small Business Administration at 13 CFR Part 121. Since these companies are dominant in their service areas, this rule does not fall within the purview of the Act.

Accordingly, notice is hereby given that, pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended, and section 553 of title 5 of the United States Code, the

following amendments to 10 CFR Part 50 are published as a document subject to codification.

PART 50--DOMESTIC LICENSING OF PRODUCTION AND UTILIZATION FACILITIES

1. The authority citation for Part 50 reads as follows:

AUTHORITY: Secs. 103, 104, 161, 182, 183, 189, 68 Stat. 936, 937, 948, 953, 954, 955, 956, as amended (42 U.S.C. 2133, 2134, 2201, 2232, 2233, 2239); secs. 201, 202, 206, 88 Stat. 1243, 1244, 1246 (42 U.S.C., 5841, 5842, 5846), unless otherwise noted. Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80-50.81 also issued under sec. 184, 68 Stat. 954, as amended; (42 U.S.C. 2234). Sections 50.100-50.102 issued under sec. 186, 68 Stat. 955; (42 U.S.C. 2236). For the purposes of sec. 223, 68 Stat. 958, as amended; (42 U.S.C. 2273), §50.54 (i) issued under sec. 161i, 68 Stat. 949; (42 U.S.C. 2201(i)), §§50.70, 50.71 and 50.78 issued under sec. 161o, 68 Stat. 950, as amended; (42 U.S.C. 2201(o)) and the Laws referred to in Appendices.

2. Section 50.44 of Part 50 is amended by revising paragraph (c) to read as follows:

§50.44 Standards for combustible gas control system in light water cooled power reactors.

* * * * *

(c)(1) For each boiling or pressurized light-water nuclear power reactor fueled with oxide pellets within cylindrical zircaloy cladding, it shall be shown that during the time period following a postulated LOCA but prior to effective operation of the combustible gas control system,

either: (i) An uncontrolled hydrogen-oxygen recombination would not take place in the containment; or (ii) the plant could withstand the consequences of uncontrolled hydrogen-oxygen recombination without loss of safety function.

(2) If neither of these conditions can be shown, the containment shall be provided with an inerted atmosphere or an oxygen deficient condition in order to provide protection against hydrogen burning and explosions during this time period.

(3) Notwithstanding paragraphs (c)(1) and (c)(2) of this section:

(i) ~~[As-soon-as-practicable-but-not-later-than-June-30,-1981]~~ Effective [4 months after the effective date of the rule] or 6 months after initial criticality, whichever is later,* an inerted atmosphere shall be provided for each boiling light-water nuclear power reactor with a Mark I or Mark II type containment; ~~[facility-for-which-the-application-for-a containment-permit-was-docketed-between-March-15,-1964-and-July-1,-1972;]~~ and

~~(ii)[(iv)--By-January-1,-1982;-facilities]~~ Effective [24 months after the effective date of the rule] all light-water nuclear power reactors that rely upon purge/repressurization systems as the primary means for controlling combustible gases following a LOCA shall be provided with either internal recombiners or the capability to install external recombiners following the start of an accident. The internal or external recombiners must [that] meet the combustible gas control requirements in paragraph (d) of this section. The containment penetrations ~~used~~ are used must ~~[meet-the-criteria-in-paragraphs-(c)(3)(A)-and-(c)(3)(B) of-this-section-applicable-to-external-recombiners-]~~ either be:

*Comparative text. Additions shown by underline, deletions by bracket and crossout.

TRANSMITTAL TO: Document Control Desk,
016 Phillips

ADVANCED COPY TO: The Public Document Room

DATE: November 3, 1981

Attached are the PDR copies of a Commission meeting transcript/s/ and related meeting document/s/. They are being forwarded for entry on the Daily Accession List and placement in the Public Document Room. No other distribution is requested or required. Existing DCS identification numbers are listed on the individual documents wherever possible.

1. Transcript of: Affirmation Session 81-40,
Oct. 29, 81. (1 copy)
 - a. Handout at Affirmation Session relating to
SECY-81-245A, 10 CFR Part 50, Interim
Requirements Related to Inerted Reactor
Containments and Hydrogen Recombiner
Capability. (1 copy)

jake brown
Office of the Secretary

