TM12-458



UNITED STATES NUCLEAR REGULATORY COMMISSION ADVISORY COMMITTEE ON REACTOR SAFEGUARDS WASHINGTON, D. C. 20555

August 2, 1979

ACRS Members

NRC STAFF MEETING TO DISCUSS THE STATUS OF TMI-2 TASK GROUPS

The NRC Staff held a meeting in the Holiday Inn in Bethesda on August 1, 1979, to discuss the status of TMI-2 related activities by NRC task groups. Several hundred representatives of utilities were present at the meeting who also participated actively in question and answer periods.

The meeting consisted of four main sessions, presented by directors of the four Task Groups. These sessions can be summarized as follows:

LESSONS LEARNED (R. Mattson)

Dr. Mattson indicated that his group has published an interim report, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations," NUREG-0578. (Copies of this report were distributed to ACRS members and technical Staff about two weeks ago). His presentation consisted of glossing over the 23 recommendations discussed in the report, indicating that some of these recommendations will be enforced by rule making. Utilities are welcome to recommend how to put more or less substance into these.

Dr. Mattson decried the large number of reportable events per year (~3000) and stated that these can be reduced to a small fraction of 3000, if not to zero. Some plants have many more reportable events than others, indicating there is much room for improvement.

All the questions were directed to the requirement of a "shift technical adviser" in the control room. The Staff described such an individual as a degreed, non-management, advisory person. A series of lively questions ensued, paraphrased as:

Where do you get such a super person?

If he is so good, why should he work in a remote location such as a nuclear plant?

If he merely advises the SRO, but has not authority over him, why need him anyway?

If he is a young person in his early twenties, his credibility may be near zilch in the control room where seniority does count.

Denton and Mattson offered no specific answers to these questions but said that if enough pay is offered, such a person can be located and persuaded to accept the position. Utilities' acceptance of this recommendation was below luke warm.

8604090249 860213 PDR FOIA BELL84-656 PDR On safety valves performance testing, the question was raised as to where one can have such done. Mattson said that such is being done in France, Germany, and Japan, and that Wiley Laboratories in the U.S. can also do it.

Safety systems are being relied upon more frequently than they were intended to be. Dr. Mattson suggested that this should be corrected.

BULLETINS and ORDERS (D. Ross)

The purpose of this group is to review generic implications of TMI-2 for all operating plants to confirm bases for their continued safe operation, and to advise Lessons Learned Task Force of any actions identified during the review. The scope of review includes loss of feedwater events and small break LOCAs. ACRS input, represented by the "Michelson Concerns", is also factored into the review. This presentation follows closely its handout material (Attachment 1).

EMERGENCY PROCEDURES (B. Grimes)

Regulatory Guide 1.101, "Emergency Planning for Nuclear Plants," has not been fully implemented in the past. Furthermore, there are some additional areas where improvements have been highlighted by the TMI-2 accident. The Staff plans to undertake an intensive effort in the next year to improve licensee preparedness at all operating plants and those applying for an OL. The main elements of this effort are:

- ' Upgraded licensee emergency plans to satisfy Reg. Guide 1.101.
- Require instrumentation to follow the course of accidents and relate such information to emergency plan levels.
- Determine that an Emergency Operations Center for Federal, state, and local personnel has been established.
- Assure that improved licensee offsite monitoring capabilities have been provided.
- Assess the relationship of state/local plans, and assure these plans cover to a distance of 10 miles from the plant.
- ' Require test exercises of approved plans.

(Attachment 2 is the Commission paper describing this effort).

OPERATOR TRAINING (P. Collins)

This topic generated the most interest from the audience and was punctuated frequently by questions. Fifteen recommendations are made by this task force. The handout material for this presentation, listing all fifteen recommendations is attached for your information (Attachment 3).

ACRS Members

(It is not clear, from the presentations, how the task groups interact, how they avoid overlapping of review areas, and how the industry would relate to them. Two of the task groups, "Emergency Preparedness" and "Operator Training", seem to have been either newly formed or newly emerged from obscurity. In addition, I&E is forming a new task group called, tentatively, "TMI-2 Implications on the Inspection and Enforcement Program.")

Peter Tam Staff Engineer

Attachments: As stated

cc: ACRS Technical Staff



BULLETINS & ORTERS TASK FORCE

PURPOSE

- O REVIEW GENERIC IMPLICATIONS OF TMI-2 ACCIDENT FOR ALL OPERATING PLANTS TO CONFIRM BASES FOR THEIR CONTINUED SAFE OPERATION.
- O ADVISE LESSONS LEARNED TASK FORCE OF ANY ACTIONS IDENTIFIED DURING THE REVIEW.

SCOPE OF REVIEW

- O LOSS OF FEETWATER EVENT
 - . ANALYSIS
 - . SYSTEMS
 - , GUIDELINES AND PROCEDURES
 - , OPERATOR TRAINING
- O SMALL BREAK LOCA
 - . AMALYSIS
 - . SYSTEMS
 - , GUIDELINES AND PROCEDURES
 - . OPERATOR TRAINING

BSO EVALUATION SEQUENCE



1.5

and the

BULLETIMS/ ORDERS

T. MOVAK (PEPUTY) AMALYSIS (ROSZTOCZY)

PROJECTS (HELTEMES)

-C-E PLANTS (M. VILLALVA)

- H PLANTS (P. O'REILLY)

-B&M PLANTS (R. CNPRA)

1

-GE PLANTS (N. PAME)

-ORPM (AS MEEDED)

.SYSTEMS .SYSTEMS (ISRAEL) -RSB -ASE -ASE -OLB -CSB -ICSB

ACRS SUBCOMMITTEF ON BULLETINS AND ORDERS

FORMED IN MID-JUNE 1979

1.2

• MEMBERSHIP

W. MATHIS (CHAIRMAN)

1

M. BENDER

H. ETHERINGTON

S. LAWROSKI

M. PLESSET

P. SHEWMON

B&O REVIEW MATTERS B&W PLANTS

O LONG-TERM ACTIONS IDENTIFIED IN COMMISSION ORDERS FOR B&W PLANTS

- O LONG-TERM ACTIONS IDENTIFIED IN STAFF SER'S ON B&W PLANTS
- NEAR-TERM ACTIONS IDENTIFIED IN NUREG-0578 RELATING TO B&O REVIEW SCOPE

AND STAFF SER'S FOR B&W PLANTS

COMMISSION ORDERS

- O FAILURE MODES AND EFFECTS ANALYSIS OF INTEGRATED CONTROL SYSTEM
- O SAFETY-GRADE REACTOR TRIP IN LOSS OF MAIN FEEDWATER
- O IMPROVEMENTS IN AUXILIARY FEEDWATER SYSTEMS
- O CONTINUED OPERATOR TRAINING

STAFF SER'S

- O TRANSIENT ANALYSES
- O SMALL BREAK LOCA ANALYSES
- O SAFETY AND RELIEF VALVE STUDIES
- O PRESSURE VESSEL INTEGRITY
- O AUXILIARY FEEDWATER SYSTEM RELIABILITY STUDY
- O AUXILIARY FEEDWATER SYSTEM CONTROL TESTS

SCHEDULE AND CHRONOLOGY OF GENERIC REVIEW OF B&W PLANTS

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ACTIVITY

ISSUE ORDERS

ISSUE SER: LIFT ORDERS

LICENSEES SUBMITTAL OF SCHEDULE FOR LONG-TERM ACTIONS

REVIEW LONG-TERM ACTION; ISSUE EVALUATION

EVALUATE ACCIDENTS AND TRANSIENTS BEYOND CURRENT DESIGN BASES

ONGOING

DECEMBER

DATE

MAY 7-17, 1979

MAY 18 - JULY 6, 1979

JUNE 18 - MID AUGUST 1979

SCHEDULE AND CHRONOLOGY OF GENERIC ASSESSMENT. OF WESTINGHOUSE-DESIGNED OPERATING PLANTS

INITIATE GENERIC REVIEW	MAY 1, 1979
MEETINGS WITH LICENSEES ON AUXILIARY FEEDWATER SYSTEMS	MAY 22-26, 1979
MEETINGS WITH LICENSEES REGARDING FORMATION OF OWNERS' GROUP	MAY 30, 1979
MEETING WITH SMALL BREAK ANALYSIS SUBCOMMITTEE OF OWNERS' GROUP	MAY 31, 1979
GENERIC REQUESTS FOR INFORMATION ISSUED	JUNE 4, 1979
MEETING WITH PROCEDURES SUBCOMMITTEE OF OWNERS' GROUP	JULY 18, 1979
ISSUE STAFF INSTRUCTIONS TO LICENSEES	MID-AUGUST 1979
ISSUE GENERIC REPORT	EARLY-SEPTEMBER 1979
LICENSEE RESPONSES TO INSTRUCTIONS	MID-SEPTEMBER 1979
ISSUE STAFF EVALUATION ON INITIAL PLANT	MID-OCTOBER 1979
EVALUATION OF ACCIDENTS & TRANSIENTS BEYOND CURRENT DESIGN	DECEMBER

SCHEDULE AND CHRONOLOGY OF GENERIC ASSESSEMENT OF COMBUSTION ENGINEERING DESIGNED OPERATING PLANTS

EVENT	DATE (1979)
INITIATE GENERIC REVIEW OF C-E DESIGNED OPERATING PLANTS	MAY 1
MEET WITH LICENSEES REGARDING AUXILIARY FEEDWATER SYSTEMS	MAY 22 - 26
MEET WITH LICENSEES AND C-E REGARDING THE FORMING OF A C-E OWNER'S GROUP	JUNE 12
MEET WITH ANALYSIS SUBCOMMITTEE OF OWNER'S GROUP	JUNE 15 & JULY 24
MEET WITH PROCEDURES AND GUIDELINE SUBCOMMITTEE OF OWNER'S GROUP	JULE 29 & AUGUST 10
ISSUE STAFF REQUIREMENTS TO LICENSEES	LATE AUGUST
ISSUE GENERIC REPORT	MID SEPTEMBER
APPLICANTS RESPOND TO STAFF REQUIREMENTS	LATE SEPTEMBER
ISSUE STAFF EVALUATION REPORT ON INDIVIDUAL PLANTS	LATE OCTOBER (FIRST REPORT)
EVALUATION OF ACCIDENTS & TRANSIENTS BEYOND CURRENT DESIGN	DECEMBER

B&O REVIEW MATTERS

BOILING WATER REACTOR PLANTS

O NUREG-0578 NEAR-TERM REQUIREMENTS RELATING TO B&O REVIEW SCOPE

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O NEAR-TERM REQUIREMENTS RESULTING FROM B&O GENERIC REVIEW OF BWR'S

PROSPECTIVE NEAR-TERM REQUIREMENTS

B&O GENERIC REVIEW OF BOILING WATER REACTOR PLANTS

- 1. EXTEND RANGE OF WATER LEVEL RECORDERS IN THE CONTROL ROOM; INITIATE EXTENDED RANGE RECORDERS ON REACTOR TRIP.
- 2. AD'S INITIATION ON EITHER (LOW)³ WATER LEVEL OR HIGH DRYWELL PRESSURE (IN CONJUNCTION WITH OTHER PERMISSIVES).
- 3. PROVIDE FOR AUTOMATIC RE-INITIATION OF RCIC AND HPCI ON (LOW)² LEVEL.
- 4. PROVIDE FOR ISOLATION OF VENTING FROM ISOLATION CONDENSERS ON HIGH RADIATION LEVELS.
- 5. REDUCE FAILURE OF RELIEF VALVES BY REDUCING CHALLENGE RATE AND/OR IMPROVING DESIGN.
- 6. MODIFY OPERATING PROCEDURES TO REQUIRE A LOW PRESSURE SYSTEM RUNNING (LPCI, CORE SPRAY, CONDENSATE SYSTEM) BEFORE MANUAL DEPRESSURIZATION.
- 7. MAKE PROCEDURES CONSISTENT WITH OPERATOR SCENARIOS BEING DEVELOPED.
- 8. DEVELOP GENERIC GUIDELINES FOR EMERGENCY PROCEDURES.
- 9. ADDITIONAL OPERATOR TRAINING.

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- 10. ESTABLISH AND MAINTAIN ONE SET OF AS-BUILT DRAWINGS ON SITE.
- 11. DETERMINE ROLE OF RECIRCULATION PUMPS IN CASE OF INADEQUATE CORE COOLING.
- 12. INVESTIGATE NATURAL CIRCULATION WITH CORE SPRAY.
- 13. ANALYSIS OF BREAK IN RECIRCULATION LINE TO DETERMINE WHETHER ISOLATION VALVES SHOULD BE CLOSED.
- 14. DEVELOP IMPROVED SMALL BREAK METHODS.
- 15. VERIFY BY EXPERIMENT THE SMALL BREAK LOCA METHODS.

SCHEDULE AND CHRONOLOGY OF GENERIC REVIEW OF BWR'S

ACTIVITY	DATE
INITIATE GENERIC REVIEW	JUNE 7, 1979
MEETING WITH LICENSEES	JUNE 28, 19/9
GENERIC REQUESTS FOR INFORMATION ISSUED	JULY 13, 1979
ISSUE GENERIC REPORT AND INSTRUCTIONS TO LICENSEES	MID- SEPTEMBER
LICENSEE RESPONSES TO INSTRUCTIONS	MID-OCTOBER
INITIAL STAFF EVALUATION ON INDIVIDUAL PLANTS	MID-NOVEMBER
EVALUATE ACCIDENTS AND TRANSIENTS BEYOND CURRENT DESIGN BASES	DECEMBER

NEAR TERM REQUIREMENTS

FOR WESTINGHOUSE AND COMBUSTION ENGINEERING OPERATING PLANTS

AUXILIARY PEEDWATER SYSTEM

. GENERIC

- , AUTOMATE. (LL)
- . SINGLE SUCTION VALVE
- . ALTERNATE WATER SOURCE
- . CST LOW LEVEL ALARM
- . PUMP ENDURANCE TEST
- , FLOW INDICATION (LL)
- . VALVE POSITION (LOSS OF AIR)
- . ACTUATION ON LOSS OF ALL AC
- , TECH SPECS

O PLANT SPECIFIC

AFW PLMP TEST CRITERIA

MODIFY VALVE LINEUPS

REVIEW COMMON MORE ELECTRICAL FAILURES

MODIFY SURVEILLANCE TEST PROCEDURES

PROCEDURES

- O SMALL LOCA
- O EXTENDED LOSS OF FEEDWATER
- O SG DUMP VALVE OPERATION
- o TRAINING

ANALYSIS

Sim "Ban Sime" "

O SMALL BREAK LOCA

O EXTENDED LOSS OF FEEDWATER

O MICHAELSON CONCERNS

O VENDOR GUIDELINES

O CODE VERIFICATION

O INADEQUATE CORE COOLING SYMPTOMS/OPERATOR ACTIONS

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O STAFF SMALL BREAK AUDITS

Emergency Prefaredness B. Grunes

July 23, 1979

SECY-79-450

For:

Thru:

Executive Director for Operations TARE for LV.G Harold R. Denton, Director, Office of Nuclear Reactor From: Regulation

ACTION PLAN FOR PROMPTLY IMPROVING EMERGENCY PREPAREDNESS Subject:

To inform the Commission of the staff's plans to take Purpose: immediate steps to improve licensee preparedness at all operating power plants and for near-term OL's.

While the emergency plans of all power reactor licensees Discussion: have been reviewed by the staff in the past for conformance to the general provisions of Appendix E to 10 CFR Part 50, the most recent guidance on emergency planning, primarily that given in Regulatory Guide 1.101 "Emergency Planning for Nuclear Power Plants", has not yet been fully implemented by most reactor licensees. Further, there are some additional areas where improvements in emergency planning have been highlighted as particularly significant by the Three Mile Island accident.

> The NRR staff plans to undertake an intensive effort over about the next year to improve licensee preparedness at all operating power reactors and those reactors scheduled for an operating license decision within the next year. This effort will be closely coordinated with a similar effort by the Office of State Programs to improve State and local response plans through the concurrence process and Office of Inspection and Enforcement efforts to verify proper implementation of licensee emergency preparedness activities.

The main elements of the staff effort, as listed in Enclosure 1, are as follows:

 Upgrade licensee emergency plans to satisfy Regulatory Guide 1.101, with special attention to the development of uniform action level criteria based on plant parameters.

3656 15pp.

Attachment 2

The Commissioners

(2) Assure the implementation of the related recommendations of the NRR Lessons Learned Task Force involving instrumentation to follow the course of an accident and relate the information provided by this instrumentation to the emergency plan action levels. This will include instrumentation for post-accident sampling, high range radioactivity monitors, and improved in-plant radioiodine instrumentation. The implementation of the Lessons Learned recommendation on instrumentation for detection of inadequate core cooling will also be factored into the emergency plan action level criteria.

- 2 -

- (3) Determine that an Emergency Operations Center for Federal, State and local personnel has been established with suitable communications to the plant, and that upgrading of the facility in accordance with the Lessons Learned recommendation for an in-plant technical support center is underway.
- (4) Assure that improved licensee offsite monitoring capabilities (including additional TLD's or equivalent) have been provided for all sites.
- (5) Assess the relationship of State/local plans to the licensee's and Federal plans so as to assure the capability to take appropriate emergency actions. Assure that this capability will be extended to a distance of 10 miles as soon as practical, but not later than January 1, 1981. This item will be performed in conjunction with the Office of State Programs and the Office of Inspection and Enforcement.
- (6) Require test exercises of approved Emergency Plans (Federal, State, local, licensees), review plans for such exercises, and participate in a limited number of joint exercises. Tests of licensee plans will be required to be conducted as soon as practical for all facilities and before reactor startup for new licensees. Exercises of State plans will be performed

in conjunction with the concurrence reviews of the Office of State Programs. Joint test exercises involving Federal, State, local and licensees will be conducted at the rate of about 10 per year, which would result in all sites being exercised once each five years.

The staff review will be accomplished by about 6 review teams, similar to the concept used to assure suitable implementation of the physical security provisions of 10 CFR 73.55. As a minimum, the teams will consist of a team leader from NRR, a member from Los Alamos Scientific Lab (LASL) and, at least for field visits, a member from the IE Regional office. LASL will be used as the source of non-NRC team members because of the expertise gained and familiarity with the plants acquired during the physical security reviews. The Division of Operating Reactors will have the responsibility for completing these reviews for both operating reactors and near-term OL's. J. R. Miller, Assistant Director, DOR will be responsible for implementation of the program. General policy and technical direction will be provided by Brian Grimes, Assistant Director, DOR.

The first sites to be reviewed by the teams will be those scheduled for operating licenses within the next year and those sites in areas of relatively high population. Major milestones for the program are being developed and will include regional meetings with licensees to discuss the program, site visits by the review team, and meetings with local officials.

Coordination: This action plan has been discussed with the Task Force on Emergency Planning and the Task Force Chairman, T. F. Carter, has advised that the Task Force deliberations to date have indicated no reason why NRR should not proceed. The Office of State Programs concurs in this plan. The Office of Inspection and Enforcement concurs in the plan. The Commissioners

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- 4 -

NRR expects to perform this task without augmentation of resources beyond those authorized for FY79 and FY80.

Hardel R. Cut

Harold R. Denton, Director Office of Nuclear Reactor Regulation

Enclosure: Emergency Preparedness Improvements for Operating Plants and Near Term OL's

DISTRIBUTION Commissioners Commission Staff Offices Exec Dir for Operations ACRS Secretariat

ENCLOSURE NO. 1

EMERGENCY PREPAREDNESS IMPROVEMENTS

AND COMMITMENTS REQUIRED FOR OPERATING PLANTS AND NEAR TERM OL'S

1.

2

		Implementation Category <u>l</u> /
	Upgrade emergency plans to Regulatory Guide 1.101 with special attention to action level criteria based on plant parameters.	Al
	Implement certain short term actions recommended by Lessons Learned task force and use these in action level criteria.2/	
	2.1.8(a) Post-accident sampling	
	Design review complete	Α
	Preparation of revised procedures	А
	Implement plant modifications	В
	Description of proposed modification	A
	2.1.8(b) High range radioactivity monitors	В
	2.1.8(c) Improved in-plant iodine instrumentation	А
3.	Establish Emergency Operations Center for Federal,	
	 (a) Designate location and alternate location and provide communications to plant 	۸1
	 (b) Upgrade Emergency Operations Center in conjunction with in-plant technical support center 	В

Category A: Implementation prior to OL or by January 1, 1980 (see NUREG-0578). Category Al: Implementation prior to OL or by mid-1980. Category B: Implementation by January 1, 1981.

2/ The implementation of the Lessons Learned task force recommendation item 2.1.3(b), instrumentation for detection of inadequate core cooling, will also be factored into the action level criteria.

	Itom	Implementation Category
4.	Improve offsite monitoring capability	A ¹
5.	Assure adequacy of State/local plans	A ¹
	(a) Against current criteria(b) Against upgraded criteria	В
6.	Conduct test exercises (Federal, State, local, licensee)	
	(a) Test of licensees emergency plan	Al
	(b) Test of State emergency plans	A
	(c) Joint test exercise of emergency plans(Federal, State, local, licensee)	
	New OL's	В
	All operating plants	Within 5 years

"Operator Training "

Attachment 3

INCREASE MINIMUM EXPERIENCE REQUIREMENTS FOR SENIOR OPERATOR APPLICANTS

4 YEARS OF OPERATING EXPERIENCE 2 YEARS NUCLEAR - 6 MONTHS ON SITE

- NUCLEAR PLANT STAFF ENGINEER OR
- CONTROL ROOM OPERATOR
- 2 YEARS MAY BE ACADEMIC

SENIOR OPERATOR APPLICANTS MUST HOLD AN OPERATOR LICENSE FOR SIX MONTHS

MORE SPECIFIC TRAINING REQUIREMENTS FOR HOT LICENSE APPLICANTS

REQUIRE SIMULATOR TRAINING FOR HOT LICENSE APPLICANTS

MORE FREQUENT AUDITING OF TRAINING PROGRAMS, INCLUDING ADMINISTRATION OF SOME CERTIFICATION EXAMINATIONS

RECOMMENDATION 6 REQUIRE INSTRUCTORS TO HOLD SENIOR OPERATOR LICENSES

RECOMMENDATIONS 7, 8 AND 9

REQUALIFICATION PROGRAMS

 REQUIRE ANNUAL SIMULATOR RETRAINING
 REQUIRE SPECIFIC EXERCISES
 NRC ADMINISTER SOME OF THE ANNUAL EVALUATIONS

RECOMMENDATIONS 10, AND 13

NRC WRITTEN EXAMINAITONS

A. INCREASE THE SCOPE TO INCLUDE THERMODYNAMICS, HYDRAULICS AND RELATED SUBJECTS

B. NEW PASSING GRADES FOR WRITTEN EXAMINATIONS

> 80% OVERALL 70% EACH CATEGORY

C.INFORM FACILITY MANAGEMENT OF RESULTS

RECOMMENDATIONS 11, 12 AND 15

NRC OPERATING TESTS

- A. PART OF THE OPERATING TEST TO BE ADMINISTERED ON A SIMULATOR
- B. SENIOR OPERATORS TO BE ADMINISTERED SIMULATOR OPERATING TESTS
- C. REVIEW ANSI/ANS 3.5-1979 "NUCLEAR POWER PLANT SIMULATORS"