



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

FEB 8 1983

MEMORANDUM FOR: William J. Dircks
Executive Director for Operations

FROM: Victor Stello, Jr., Chairman
Committee to Review Generic Requirements

SUBJECT: MINUTES OF CRGR MEETING NUMBER 30

The Committee to Review Generic Requirements met on Wednesday, January 26, 1983, from 1-4 p.m. A list of attendees is enclosed.

1. P. Baranowsky (RES) responded to Committee questions that resulted from the anticipated transient without scram (ATWS) briefing given at CRGR Meeting No. 24 and that are given in the minutes for that meeting. A copy of the detailed responses to those questions was enclosed with the Agenda memorandum (dated December 8, 1982) for CRGR Meeting No. 28. A copy of the responses as summarized and presented to the Committee by Mr. Baranowsky is enclosed.

There was a discussion of the staff's conclusions concerning symptom-based emergency operating procedures (EOP) for ATWS. In this regard, it was suggested that the staff consider advising industry as to the adequacy of the EOPs relative to ATWS so these might be implemented prior to completion of the ATWS rulemaking.

The Committee was unable to determine the total safety benefit and costs that would result from implementing all of the modifications identified by the staff. Mr. Baranowsky indicated that the ATWS rulemaking package under development would attempt to address the total benefits and costs that would result from all of the proposed modifications. RES plans to send the rulemaking package for CRGR review in May 1983.

2. E. Jordan (IE) informed the Committee of recent IE actions to address a potentially significant problem pertaining to fraudulent products that may have been sold to nuclear industry companies by Ray Miller, Inc. The problem may affect both PWR and BWR facilities. The staff is currently evaluating the problem and its effects. If evaluation so indicates, specific licensee or CP holder action may be requested. In the interim, IE has issued IE Information Notice No. 83-01, titled Ray Miller, Inc., dated January 26, 1983. Addressees of this information notice, all holders of a nuclear power reactor or fuel facility operating license (OL) or construction permit (CP), are expected to review the information in the notice for applicability to their facilities. No specific action or response is requested by the notice.

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Mr. Jordan will keep the CRGR Chairman informed concerning this matter, and stated that any future actions proposed to be required of OLs or CPs will be forwarded for CRGR review.

Original Signed by
V. Stello

Victor Stello, Jr., Chairman
Committee to Review Generic Requirements

Enclosures:

- 1. List of Attendees
- 2. Briefing Material - ATWS

cc: Commission (5)
 Office Directors
 Regional Administrators
 CRGR Members
 G. Cunningham, ELD
 Secy

Distribution:

VStello
 TEMurley
 DEDROGR Staff
 DEDROGR cf
 Central File
 PDR (NRG/CRGR)

OFC	: DEDROGR/S	: DEDROGR/D	: DEDROGR	:	:	:	:
NAME	: WSchwink	: TEMurley	: VStello	:	:	:	:
DATE	: 2/7/83	: 2/7/83	: 2/ /83	:	:	:	:

CRGR MEETING #30
LIST OF ATTENDEES
(January 26, 1983)

CRGR MEMBERS

V. Stello
E. Jordan
J. Heltemes
J. Scinto
D. Eisenhut
D. Chapell (for D. Cunningham)
M. Ernst (for R. Bernero)

OTHERS

W. Schwink
G. Burdick
S. Stern
A. Thadani
E. Rossi
J. Milhoan
J. Austin
C. Graves
D. Pyatt
P. Baranowsky

BRIEFING
TO CRGR JANUARY 26, 1983
ALTERNATIVES
REGARDING ATWS RULEMAKING

AGENDA FOR CRGR MEETING
ON ATWS - JANUARY 26, 1983

- o BRIEF SUMMARY OF PROGRESS TO RESOLVE ATWS ISSUE
- o SUMMARY OF RESPONSES TO CRGR QUESTIONS

STATUS OF PAST ACTIVITIES

NOVEMBER 24, 1981

FRN NOTICE WITH PROPOSED RULES

APRIL 23, 1982

COMMENTS RECEIVED ON FRN. LARGE
STUDY BY UTILITY GROUP ON ATWS.

SEPTEMBER -
NOVEMBER, 1982

TASK FORCE AND STEERING GROUP
MET AND DRAFTED RECOMMENDATIONS

NOVEMBER 3, 1982

CRGR BRIEFED

NOVEMBER 10, 1982

CRGR SUBMITS QUESTIONS TO STAFF

DECEMBER 7, 1982

STAFF SUBMITS ANSWERS TO CRGR
QUESTIONS

PROPOSED SCHEDULE

OBTAIN OFFICE CONCURRENCE	3/1/83
CRGR & ACRS REVIEWS COMPLETE	5/1/83
PAPER TO COMMISSION	6/1/83
PROPOSED RULE PUBLISHED	7/1/83

4 ALTERNATIVES

1. NO ATWS RULE (OR INCLUDE ATWS UNDER THE SEVERE ACCIDENT PROGRAM)
2. ADOPT THE PROPOSED OR A MODIFIED VERSION OF THE UTILITY GROUP RULE
3. ADOPT THE STAFF RULE OR A MODIFICATION OF IT
4. ADOPT THOSE PORTIONS OF THE HENDRIE RULE FOR WHICH WE HAVE A TECHNICAL BASIS

SOME STRATEGY

1. FOCUS ON P_{ATWS} AS FIGURE OF MERIT
2. DO INCREMENTAL VI ANALYSIS
3. USE INDUSTRY COST FIGURES
4. DO SENSITIVITY ANALYSES
5. BE PRESCRIPTIVE, AVOID ANALYSES WHERE POSSIBLE

RECOMMENDATIONS OF
THE ATWS TASK FORCE AND
STEERING GROUP

BWR (GE)

- o INSTALL ALTERNATE ROD INJECTION (ARI)
- o INCREASE SLCS CAPACITY TO ~ 85 GPM
- o CHANGE MSIV ISOLATION SET POINT TO LEVEL 1
- o REQUIRE UTILITIES TO USE EMERGENCY PROCEDURES GUIDELINES
- o BWR-5,-6 AND "LATE" BWR-4; INJECT BORON THROUGH HPI

WESTINGHOUSE

- o INSTALL DIVERSE INITIATION OF AFW AND TURBINE TRIP INDEPENDENT FROM RPS

CE/B&W

- o INSTALL DIVERSE INITIATION OF AFW AND TURBINE TRIP INDEPENDENT FROM RPS
- o INSTALL DIVERSE SCRAM SYSTEM

RESPONSE TO CRGR QUESTIONS
OF NOVEMBER 3, 1982
BRIEFING

- A. WHAT OCCUPATIONAL EXPOSURES ARE ASSOCIATED WITH PROPOSED FIX?
- o ESSENTIALLY NO DOSES FOR ARI, AMSAC, DIVERSE SCRAM SYSTEM INSTALLATION
 - o IF REQUIRED TO MAKE MODIFICATIONS INSIDE CONTAINMENT, SUCH AS INCREASING SLCS TO ~ 86 GPM BY HPI INJECTION, DRAFT ENVIRONMENTAL IMPACT STATEMENT CONSERVATIVELY ESTIMATED 80 MAN-REM FOR EACH BWR
 - o OTHER OCCUPATIONAL EXPOSURES ARE EXPECTED TO BE APPROXIMATELY 20,000 MAN-REM FOR A 40 YEAR PLANT LIFE
- B. WHAT ARE THE BENEFITS OF THE PROPOSED FIXES?
- o BENEFITS ARE REDUCED ATWS LIKELIHOOD (OWNER BENEFITS) AND REDUCED PUBLIC RISK
 - o AT \$1000/MAN-REM EACH ATWS AVERTED IS VALUED AT \$10 BILLION OR 10^7 MAN-REM
 - o IF $\Delta P_{ATWS} \approx 10^{-4}$, BENEFIT OVER 30 YEAR PLANT LIFE $\approx 3 \times 10^4$ MAN-REM AVERTED

C. IF THE PROPOSED CHANGES ARE INCORPORATED IN ONE REGULARLY SCHEDULED REFUELING OUTAGE, WHAT WOULD BE THE INCREMENTAL COST ATTRIBUTABLE TO THE PROPOSED FIX?

o THE COSTS, PROVIDED BY THE UTILITY GROUP, ASSUME THE FIX IS INSTALLED DURING A REFUELING OUTAGE

o FOR TASK FORCE RECOMMENDED FIX

GE - 1 DAY EXTENSION FOR ARI, PROBABLY NONE FOR 86 GPM SLCS MOST PLANTS. L₁ MSIV INITIATION BEING DONE SEPARATE FROM ATWS

W - NO EXTENSION FOR INSTALLING AMSAC

CE/B&W - NO EXTENSION FOR INSTALLING AMSAC AND DIVERSE SCRAM SYSTEM

D. LARGE VARIATIONS IN THE COST ESTIMATES OF INADVERTENT TRIP: ARE THESE REAL?

<u>NSSS</u>	<u>COST OF INADVERTENT TRIP</u>	<u>BASIS OF COST FOR INADVERTENT TRIP</u>
W	\$1.0M (ALTERNATIVE 1)	ONE INADVERTENT AMSAC TRIP OVER 30 YEARS, 2 DAYS DOWNTIME
CE/B&W	\$3.0M (ALTERNATIVE 1)	ONE INADVERTENT AMSAC TRIP, 2 INADVERTENT DIVERSE SCRAM TRIPS OVER 30 YEARS, 6 DAYS DOWNTIME
	\$5.0M (ALTERNATIVE 2)	ONE ADDITIONAL INADVERTENT OPENING OF SAFETY VALVE OVER 30 YEARS, 4 DAYS DOWNTIME
GE	\$1.0M (ALTERNATIVE 1-2)	ONE INADVERTENT ARI TRIP OVER 30 YEARS, 2 DAYS DOWNTIME
	\$5.0M (ALTERNATIVE 3B)	ONE INADVERTENT 86 GPM SLCS ACTUATION IF AUTOMATED, 10 DAYS DOWNTIME, 1 IN 30 YEARS
	\$2.5M-\$5.0M (ALTERNATIVE 3A)	ONE INADVERTENT 43 GPM SLCS ACTUATION IF AUTOMATED, 5-10 DAYS DOWNTIME, 1 IN 30 YEARS

E. HAS STAFF EXPLORED BENEFITS OF CONTAINMENT OVERPRESSURE RELIEF IN CONTEXT OF PROPOSED FIXES?

- o CONTAINMENT "FAILURE" WAS ASSUMED TO OCCUR WHEN SUPPRESSION POOL TEMPERATURE REACHED 200°F
- o AT THAT POOL TEMPERATURE, CONTAINMENT ATMOSPHERE PRESSURE SLIGHTLY ABOVE 1 ATMOSPHERE
- o CONTAINMENT OVERPRESSURE RELIEF WOULD BE BENEFICIAL IF SRV QUENCHER QUALIFIED FOR OPERATION AT MUCH HIGHER SUPPRESSION POOL TEMPERATURE

F. HAS USE OF PROCEDURES BEEN ADEQUATELY THOUGHT OUT?
LEVEL CONTROL ON BWRs DURING ATWS, HOW ACCURATE?

- o FOR MSIV INITIATION AT CURRENT LEVEL 2, ALL TRANSIENTS EVENTUALLY BECOME ISOLATION TRANSIENTS AND RESULT IN A FAILED CONTAINMENT AT 200°F POOL TEMPERATURE
- o FOR MSIV INITIATION AT PROPOSED LEVEL 1, ABOUT 30% ARE ISOLATION TRANSIENTS AND RESULT IN SUPPRESSION POOL TEMPERATURES EXCEEDING 200°F
- o FOR REMAINING 70%, MAJORITY (IF NOT ALL) ENERGY GOES TO CONDENSER, ENOUGH TIME FOR OPERATORS TO INITIATE SLCS (HEP = 0.16) AND USE EMERGENCY PROCEDURES (HEP = 0.16)
- o EPGs HAVE BEEN RECEIVED IN DEPTH BY NRC STAFF
- o HIGH ACCURACY OF LEVEL INSTRUMENTS NOT ASSUMED NOR REQUIRED

G. WHAT IS STAFF'S VIEW ON LIMITING POOL TEMPERATURES?

- o THE ISSUE OF SUPPRESSION POOL TEMPERATURE LIMITS FOR SRV QUENCHER OPERATION HAS BEEN RESOLVED AS PART OF USI A-39 (NUREG-0783)

- o DATA SUPPORTS SRV QUENCHER OPERATION THROUGH THE SUPPRESSION POOL TEMPERATURE RANGE UP TO 200°F

H. HOW ACCURATELY CAN POOL TEMPERATURE FOR BWRs BE MEASURED?
WHAT DOES OPERATOR DO WHEN POOL TEMPERATURE GREATER THAN
200°F?

- o TWO SETS OF SAFETY GRADE INSTRUMENTS MEASURE POOL
TEMPERATURE AT 8 LOCATIONS

- o EMERGENCY OPERATING PROCEDURES ARE DESIGNED TO
MAINTAIN SUPPRESSION POOL TEMPERATURES BELOW 200°F