

April 12, 1988

Project NO. 675

MEMORANDUM FOR: Distribution (see attached list)

FROM: Lester S. Rubenstein, Director
Standardization and Non-Power
Reactor Project Directorate
Division of Reactor Projects III, IV,
V and Special Projects

SUBJECT: DOE ADVANCED REACTOR SEVERE ACCIDENT PROGRAM
(ARSAP) TOPIC PAPERS - RESPONSIBILITIES AND
STATUS

The DOE ARSAP topic papers are being submitted by Combustion Engineering on the System 80+, CESSAR-DC docket. In general the review responsibility rests with RES. However, NRR has oversight and concurrence responsibilities. The review status including the identification of the papers, dates of submittals, reviewers, responsible NRR branch chiefs and secondary reviewers and milestone dates of significant events are identified in the enclosed REVIEW STATUS REPORT OF ARSAP TOPIC PAPERS. Also enclosed is the flow chart showing the proposed method of handling the topic papers.

In general we have allowed 60 days for initial review, 60 days for CE responses to RAI and 60 days for preparation of draft SER to the project manager. We expect these issues will be of interest to the ACRS subcommittee on Standardization and when we discuss our review with the ACRS subcommittee, we will involve the RES reviewers.

When RES assigns reviewers to these issues, we will upgrade the status report accordingly. If there are any questions regarding the ARSAP topic papers, please direct them to Guy Vissing, x21101.

Original Signed By:

Lester S. Rubenstein, Director
Standardization and Non-Power
Reactor Project Directorate
Division of Reactor Projects III, IV,
V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures: As stated


cc: L. Shao
J. Richardson
A. Thadani
G. Vissing
R.W. Houston

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

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A handwritten signature of Lester S. Rubenstein in dark ink.

Lester S. Rubenstein, Director
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Reactor Project Directorate
Division of Reactor Projects III, IV,
V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures: As stated

cc: L. Shao
J. Richardson
A. Thadani
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REVIEW STATUS REPORT
ON ARSAP TOPIC PAPERS

SET TOPIC PAPER SET NUMBER	TOPIC PAPER	SUBMITTAL DATE	NRR RESPONSIBLE BRANCH CHIEF	RES REVIEWER	SECONDARY REVIEWER (NRR)	RAI	RAI RESPONSE	SER TO PM	SER TO ACRS
1 RESOLVED IDCOR/NRC ISSUES APPLICABILITY TO ALWRS	REACTOR COOLANT SYSTEM NATURAL CIRCULATION (IDCOR ISSUE 2)	11/24/87	W. HODGES	C. FERREL	L. KOPP	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	IN-VESSEL STEAM EXPLOSIONS AND ALPHA MODE FAILURE (IDCOR ISSUE 7)	11/24/87	W. HODGES	C. FERREL	L. KOPP	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES- APPLICABILITY TO ALWRS	EX-VESSEL HEAT TRANSFER MODELS FROM MOLTEN CORE TO CONCRETE (IDCOR ISSUE 10)	11/24/87	W. HODGES	C. FERREL	L. KOPP	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	FISSION PRODUCT RELEASE PRIOR TO VESSEL FAILURE (IDCOR ISSUE 1)	11/24/87	L. CUNNINGHAM	C. FERREL	T. ESSIG	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	RELEASE MODEL FOR CONTROL ROD MATERIALS (IDCOR ISSUE 3)	11/24/87	L. CUNNINGHAM	C. FERREL	T. ESSIG	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	FISSION PRODUCT AND AEROSOL DEPOSITION IN RCS AND CONTAINMENT (IDCOR ISSUES 4 & 12)	11/24/87	L. CUNNINGHAM	C. FERREL	T. ESSIG	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	EX-VESSEL FISSION PRODUCT RELEASE (DURING CORE - CONCRETE INTERACTIONS) (IDCOR ISSUE 9)	11/24/87	L. CUNNINGHAM	C. FERREL	T. ESSIG	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	REVAPOORIZATION OF FISSION PRODUCTS (IDCOR ISSUE 11)	11/24/87	L. CUNNINGHAM	C. FERREL	T. ESSIG	05/30/88T	07/30/88T	09/30/88T	10/30/88T
1 RESOLVE IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	SECONDARY CONTAINMENT PERFORMANCE (IDCOR ISSUE 16)	11/24/87	J. CRAIG	C. FERREL	J. RAVAL	05/30/88T	07/30/88T	09/30/88T	10/30/88T

REVIEW STATUS REPORT
ON ARSAP TOPIC PAPERS

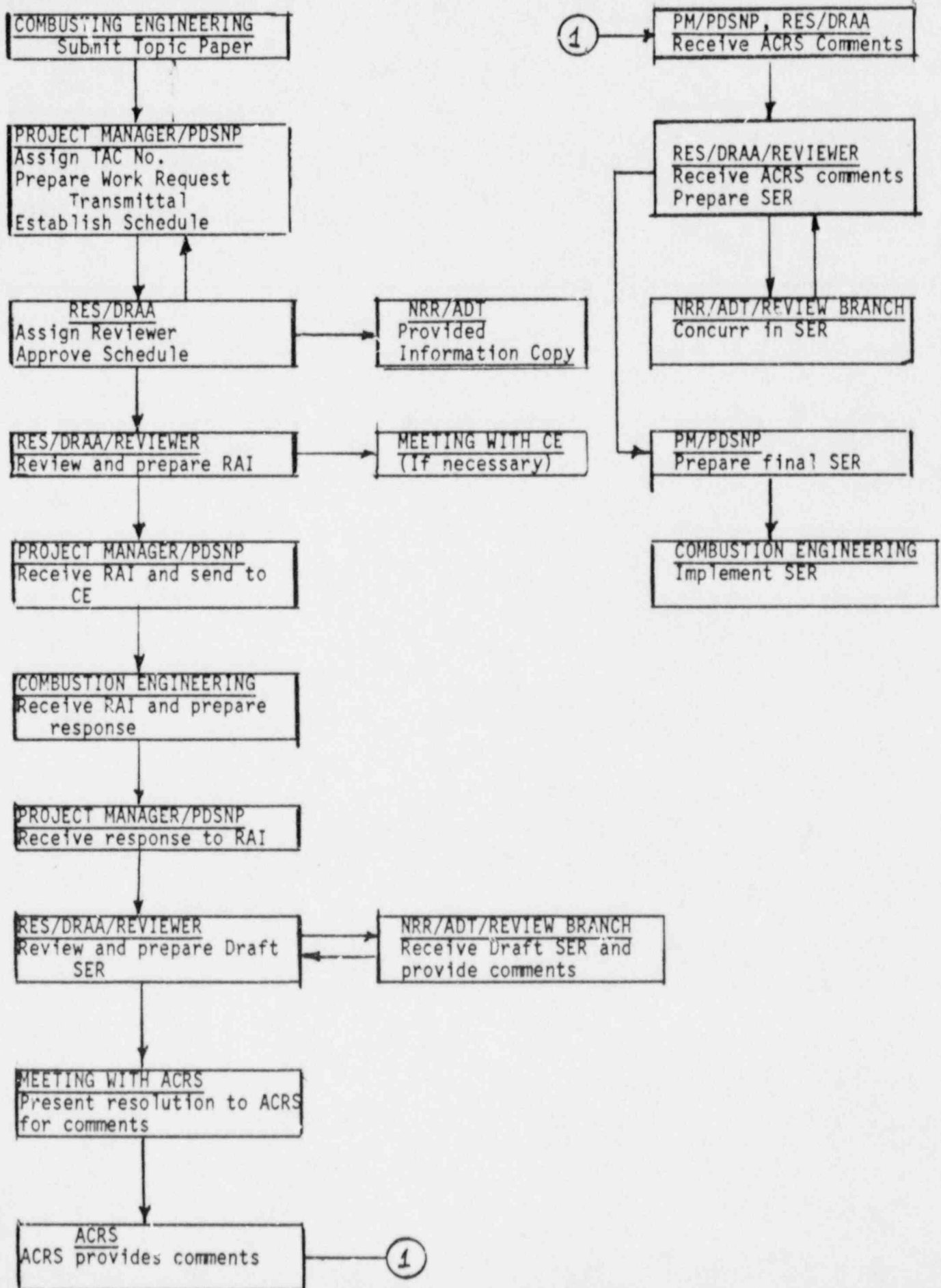
SET TOPIC PAPER SET NUMBER	TOPIC PAPER	SUBMITTAL DATE	NRR RESPONSIBLE BRANCH CHIEF	RES REVIEWER	SECONDARY REVIEWER (NRR)	RAI	RAI RESPONSE	SER TO PM	SER TO ACRS
1 RESOLVED IDCOR/NRC ISSUES - APPLICABILITY TO ALWRS	MODELING OF EMERGENCY RESPONSE (IDCOR ISSUE 14)	11/24/87	W. HODGES	C. FERREL	L. KOPP	05/30/88T	07/30/88T	09/30/88T	10/30/88
2 PLANT RESPONSE UNDER SEVERE ACCIDENT CONDITIONS	IN-VESSEL HYDROGEN GENERATION (IDCOR ISSUE 5)	04/30/88	C. MCCracken		F. WITT	06/30/88T	08/30/88T	10/30/88T	11/30/88
2 PLANT RESPONSE UNDER SEVERE ACCIDENT CONDITIONS	CORE MELT PROGRESSION AND VESSEL FAILURE (IDCOR ISSUE 6)	04/30/88	W. HODGES		L. KOPP	06/30/88T	08/30/88T	10/30/88T	11/30/88
2 PLANT RESPONSE UNDER SEVERE ACCIDENT CONDITIONS	DIRECT CONTAINMENT HEATING BY EJECTED CORE MATERIALS (IDCOR ISSUE 8)	04/30/88	J. CRAIG		J. RAVAL	06/30/88T	08/30/88T	10/30/88T	11/30/88
2 PLANT RESPONSE UNDER SEVERE ACCIDENT CONDITIONS.	CONTAINMENT PERFORMANCE (IDCOR ISSUE 15)	04/30/88	J. CRAIG		J. RAVAL	06/30/88T	08/30/88T	10/30/88T	11/30/88
2 PLANT RESPONSE - UNDER SEVERE ACCIDENT CONDITIONS	HYDROGEN IGNITION AND BURNING (IDCOR ISSUE 17)	04/30/88	C. MCCracken		F. WITT	06/30/88T	08/30/88T	10/30/88T	11/30/88
2 PLANT RESPONSE UNDER SEVERE ACCIDENT CONDITIONS	DEBRIS COOLABILITY (IDCOR ISSUE 10)	04/30/88	W. HODGES		L. KOPP	06/30/88T	08/30/88T	10/30/88T	11/30/88
3 METHODOLOGY PRA	EXTERNAL EVENTS	05/30/88	R. BARRETT		G. KELLY	07/30/88T	09/30/88T	11/30/88T	12/30/88
3 METHODOLOGY PRA	SUCCESS CRITERIA	05/30/88	R. BARRETT		G. KELLY	07/30/88T	09/30/88T	11/30/88T	12/30/88
3 METHODOLOGY PRA	ACCIDENT SEQUENCE SELECTION	05/30/88	L. CUNNINGHAM		T. ESSIG	07/30/88T	09/30/88T	11/30/88T	12/30/88
3 METHODOLOGY PRA	HUMAN RELIABILITY ANALYSIS	05/30/88	W. REGAN		G. LAPINSKY	07/30/88T	09/30/88T	11/30/88T	12/30/88
3 METHODOLOGY PRA	COMMON CAUSE FAILURE	05/30/88	R. BARRETT		G. KELLY	07/30/88T	09/30/88T	11/30/88T	12/30/88
4 SEVERE ACCIDENT PERFORMANCE	ESSENTIAL EQUIPMENT PERFORMANCE (IDCOR ISSUE 18)	07/30/88	J. CRAIG		J. RAVAL	09/30/88T	11/30/88T	01/30/89T	02/30/89
4 SEVERE ACCIDENT PERFORMANCE	CRITERIA FOR SAFE STABLE STATES	07/30/88	W. HODGES		L. KOPP	09/30/88T	11/30/88T	01/30/89T	02/30/89

REVIEW STATUS REPORT
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SET TOPIC PAPER SET NUMBER	TOPIC PAPER	SUBMITTAL DATE	NRR RESPONSIBLE BRANCH CHIEF	RES REVIEWER	SECONDARY REVIEWER (NRR)	RAI	RAI RESPONSE	SER TO PM	SER TO ACRS
5 SAFETY GOALS EVALUATION	SAFETY GOAL IMPLEMENTATION - INTERPRETATION OF GOALS AND USAGE OF PRA RESULTS IN COMPARISON WITH GOALS, INCLUDING INTERPRETATION OF UNCERTAINTIES	09/30/88	R. BARRETT		G. KELLY	11/30/88T	01/30/89T	03/30/89T	04/30/89
5 SAFETY GOALS EVALUATIONS	UNCERTAINTIES IN PLANT RISK ANALYSIS	09/30/88	R. BARRETT		G. KELLY	11/30/88T	01/30/89T	03/30/89T	04/30/89
5 SAFETY GOALS EVALUATION	MAAP-DOR CODE VALIDATION	09/30/88	R. BARRETT		G. KELLY	11/30/88T	01/30/89T	03/30/89T	04/30/89
6 SEVERE ACCIDENT MANAGEMENT	S/A MANAGEMENT - PLANNING	10/30/88	L. CUNNINGHAM		T. ESSIG	12/30/88T	02/28/89T	04/30/89T	05/30/89
6 SEVERE ACCIDENT MANAGEMENT	S/A MANAGEMENT - EQUIPMENT CAPABILITY AND OPERATIONAL REQUIREMENTS	10/30/88	J. CRAIG		J. RAVAL	12/30/88T	02/28/89T	04/30/89T	05/30/89

Total ##
72

PROPOSED METHOD OF HANDLING
SEVERE ACCIDENT ISSUE TOPIC PAPERS



THE ARSAP PROGRAM

DOE ARSAP MISSION

- ASSIST IN THE EARLY RESOLUTION OF RISK SIGNIFICANT SEVERE ACCIDENT ISSUES SO THAT THEY WILL NOT BE MAJOR ISSUES FOR EVOLUTIONARY ADVANCED LIGHT WATER REACTORS DURING THE 1990'S

DOE ARSAP OBJECTIVES

- **SUPPORT DOE DESIGN VERIFICATION PROGRAM REACTOR VENDORS' SEVERE ACCIDENT ASSESSMENT, ANALYSES, AND ISSUE RESOLUTION**
- **PROVIDE INPUT TO, REVIEW, AND SUPPORT EPRI REQUIREMENTS DOCUMENT IN SEVERE ACCIDENT AREAS.**
- **ACHIEVE MORE GENERIC RESOLUTION OF SEVERE ACCIDENT ISSUES — THAN MAY OCCUR THROUGH SUPPORT OF VENDOR CERTIFICATION OR OF EPRI REQUIREMENTS DOCUMENT — SUCH THAT THEY ARE NOT ISSUES FOR ALWR's.**