WSEI E MILESTONES

DEC 07 1988

MEMORANDUM FOR: John J. Linehan, Acting Director
Repository Licensing Project Directorate

Ronald L. Ballard, Chief
Geosciences and Systems Performance Branch

Stuart A. Treby, Assistant General Counsel
Rulemaking and Fuel Cycle Division
Office of the General Counsel

Francis X. Cameron, Rulemaking Division
Bernard M. Bordenick, Hearing Division
Office of the General Counsel

FROM: Joseph O. Bunting, Chief
Engineering Branch
NRC/CNWRA Program Element Manager

SUBJECT: DISTRIBUTION OF REVIEW PLAN FOR PRELIMINARY PROGRAM ARCHITECTURE "E" MILESTONES

Enclosed you will find the review plan and associated attachments for evaluating the preliminary "E" milestones to be submitted by the Center in accordance with their plan for the accelerated development of the Program Architecture. The plan itself was developed in cooperation with CNWRA Project Management staff, the Office of the General Counsel, and the Division's Line Management. Please feel free to contact me if you have any questions regarding this matter.

Original Signed By

Joseph O. Bunting, Chief
Engineering Branch
NRC/CNWRA Program Element Manager

Enclosures: As stated

WSEI E MILESTONES

OFFICIAL CONCURRENCE AND DISTRIBUTION RECORD

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Engineering Branch
NRC/CNWRA Program Element Manager

SUBJECT: DISTRIBUTION OF REVIEW PLAN FOR PRELIMINARY PROGRAM ARCHITECTURE "E" MILESTONES

DATE: DEC 07 1988

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NMSS Director's R/F	MMace, ARM/CNB1	BThomas,RLPD
MLee, HLEN		

(* See previous concurrence)

OFC	HLEN*	HLEN*	HLEN*	RLPD*	RLPD*	HLGP
NAME	MPLee/yrb	PMAltomare	JOBunting	RJohnson	JLinehan	RBallard
DATE	11/03/88	11/04/88	11/08/88	11/09/88	11/09/88	11/ /88

OFC	OGC	OGC	OGC	RLPD*		
NAME	FXCameron	BMBordenick	STreby	BThomas		
DATE	11/30/88	11/29/88	11/30/88	11/09/88		

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DATE:

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OFC	:HLEN	:HLEN	:HLEN	:RLPD	:RLPD	:HLGP
NAME	:MPLee	:PMAltomare	:JOBunting	:RJohnson	:JLinehan	:RBallard
DATE	:11/03/88	:11/ /88	:11/8 /88	:11/9 /88	:11/9 /88	:11/22/88

OFC	:OGC	:OGC	:OGC	:RLPD	:	:
NAME	:FXCameron	:BMBordenick	:STreby	:BThomas	:	:
DATE	:11/ /88	:11/ /88	:11/ /88	:11/9 /88	:	:

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DEC 07 1988

REVIEW INS E MILESTONES

WORK PLAN FOR REVIEW OF "E" MILESTONES DRAFTS

BACKGROUND

The "E1" milestone is the first of eight so-called "Program Element Activities" identified by the Center in their Schedules and Milestones and Deliverables (enclosure 1) in the accelerated development of the Program Architecture. (The specification for the December deliverable is described in enclosure 2) For each statute and regulation addressed by the "E" milestones, the concepts described in process blocks 3 through 15 of the 22-step process diagram for developing and maintaining the Program Architecture (enclosure 3) will be addressed. (The process diagram and attendant definitions are based on the Program Architecture Glossary of Terms for HLW jointly developed by NRC and the CNWRA.) The "E" milestone will perform the analysis pursuant to the instructions contained in Technical Operating Procedure-001-02 (enclosure 4) for implementing these process steps, specifically identifying "elements of proof," "uncertainties," and "uncertainty reduction methods" and other concepts, as appropriate, for those regulatory topics proposed by the Center. Those steps related to technical uncertainties, however, will only be developed to the extent practical.

Before the "E" milestones drafts are submitted to NRC in December, it will be reviewed by the Center's Program Architecture Review Committee (PARC) as a quality assurance step and then by the Center's WSE&I Program Element as an overall integration step prior to data entry into the Program Architecture Support System (PASS). Once in PASS, the information will be used in the subsequent analyses to be performed, as indicated by the remaining process blocks in the Center's 22-step process diagram (process blocks 16 through 22) and reflected by the Center's Schedules and Milestones and Deliverables.

The thrust of this accelerated Program Architecture development, thus, is to time-phase its development so as to produce, to the extent practical, interim products that would assist NRC management and staff in meeting NRC's programmatic production schedules for rulemakings, Technical Positions, and site characterization program reviews. To that end, the development of the "E" milestone drafts will focus first on those regulatory requirements that are "siting constrained."

The CNWRA will provide the staff with drafts of the "E" milestones. These milestones will provide a preliminary view of the Program Architecture to be fully developed in subsequent steps of the Program Architecture developmental process. The Center, therefore, would greatly benefit from any initial response NRC might have with regard to the effectiveness of the Program Architecture development process at this time, as described in TOP-001-02. NRC, therefore, will be selectively reviewing the "E" milestone drafts in order to provide the Center with some early feedback with regard to the development process to date. The purpose of this work plan is to provide NRC staff with guidance on how to provide this feedback.

PURPOSE OF REVIEW

The purpose of the review is threefold. First, a compliance review will verify that the NRC approved procedures as described in Technical Operating Procedure (TOP)-001-02, Program Architecture Relational Database Work Instruction, were followed in preparing this installment of the Program Architecture report and that there are no flaws in the procedure itself. Second, a technical review will evaluate the quality of the technical information developed from TOP-001-02. Third, a potential regulatory impact review will provide early views to the Division Director regarding regulatory and institutional uncertainties and potential future rulemakings or Technical Positions based on the Center's inputs and the staff's comments on the inputs.

It should be noted that the intent of the compliance and technical review is not to pass judgement on the completeness or perfection of the Center's efforts to date nor is this an NRC acceptance review. Rather, these reviews should focus on identifying major concerns with the Center's compliance with the TOP procedures as agreed to by NRC; and to determine if there are any major technical concerns in the quality of the information being presented and if so, to be specific as to the problem(s) and recommend corrective action.

SCOPE OF REVIEW AND PRODUCTS
Compliance and Technical Review

1. Not all regulatory requirement topics submitted by the Center are to be reviewed at this time. A select group of regulatory topics will be reviewed to ascertain that the procedures described in TOP-001-02 are being implemented properly and that the product being developed is technically reasonable.

2. There are five (5) regulatory requirement topics to be reviewed. These topics correspond to the staffs ongoing "rulemakings" and other "topical areas" which sample other types of 10 CFR Part 60 requirements. The selected topics are listed below. Additional regulatory requirement topics may be reviewed or deleted, as necessary.

Rulemakings:

- E3 - Overall System Performance Objective of the Geologic Setting, Engineered Barrier System, Shafts, Boreholes, and Seals after Permanent Closure [includes only the identification of "unanticipated processes and events"].
- E4 - Containment Performance of the Engineered barrier System to be Substaintially Complete after Permanent Closure.
- E6 - Geologic repository is Located so Pre-waste-emplacement Groundwater Travel Time is at Least 1000 Years [includes definition of the "disturbed zone"].

Other topic areas:

E5 - Release of Radionuclides from the Engineered Barrier System to be a Gradual Process over Long Times After Permanent Closure [includes review only for on the identification of "anticipated processes and events"].

E17 - Adverse Condition: Geochemical Processes.

3. For those regulatory requirement topics listed above, all data fields are to be reviewed. As mentioned earlier, information related to technical uncertainties will only be developed to the extent practical. Furthermore, all WSE&I process blocks steps will not be complete except for regulatory requirement topic "E17" because it is the example of the "proof-of-system" to be used to demonstrate the capabilities of the Program Architecture Support System (PASS).

4. The compliance review will precede the technical review. This review will be based on the instructions of TOP-001-02. Specifically, the reviewers should review the data fields with their individual regulatory requirement topics and identify major concerns regarding compliance with the TOP-001-02 instructions. In performing this part of the review, reviewers should assure themselves that there are no flaws in the procedure itself. This review will also scope out the technical review in more detail.

5. The technical review should focus on the quality of the information being developed from the TOP-001-02 procedure. For example, the review is not expected to verify that the grouping of regulatory requirement topics is complete without exception. Rather, the intent of the review is for those regulatory topics identified, that they are reasonable based on the reviewers current state of knowledge and that omissions are not obvious.

6. The comments raised by the staff with regard to the information provided by the Center should be clear as to the nature of the problem and specific as to the corrective action necessary to improve the product. Comments made regarding each regulatory requirement topic should identify the specific TOP-001-02 instruction and PASS data field. When possible, important reference material is to be identified.

Potential Regulatory Impact Reviews

1. The review will consider both the Center's identification of regulatory and institutional uncertainties for all regulatory requirement topics as well as the staff's comments in preparing preliminary views on the potential impact on the regulatory framework. Potential impact will address the nature of the uncertainties and the need for new rulemakings or Technical Positions (TP's) or changes to ongoing rulemakings or TP's.

2. The staff's views will be presented to both the Branch Chiefs and Division Director in the form of a briefing. No comments will be prepared for the Center.

ACTIVITIES AND RESPONSIBILITIES
Compliance and Technical Review

1. The NRC/CNWRA Program Manager has the final responsibility for those comments dispatched to the Center. Those comments received from the respective reviewers will be integrated by the WSE&I Program Element with the assistance of the other Program Element Managers or other designated staff for the NRC/CNWRA Program Manager's approval and subsequent transmittal to the Center.

2. Section Leaders and Program Element Managers are responsible for the quality of the review performed by the reviewers in their respective sections program elements.

3. Outside of the DHLW, a review will also be conducted with the Office of General Counsel (OGC). Within OGC, the review will be coordinated by the Assistant General Counsel for Rulemaking and Fuel Cycle. As part of the review, OGC will review the "elements of proof" for all of the regulatory requirement topics submitted. OGC will assess whether the "elements of proof" correctly reflect the regulatory requirements. OGC will also evaluate any "regulatory uncertainties" and "uncertainty reduction methods" identified.

4. In preparation for the review, review staff are expected to obtain a familiarity with and a working knowledge of TOP-001-02. To assist them with their preparation, the WSE&I Program Element will schedule a brief review and discussion session concerning TOP-001-02 and other related material prior to initiating their review. Questions will be answered at this time and an example worked-thru to calibrate the reviewers. (WSE&I staff will be available to answer questions and provide assistance at any time during the review.)

5. The activities and responsibilities for conducting the compliance and technical reviews are as follows:

	Review Activity	Responsibility
o	Preparation for review	Review staff
o	Compliance review of regulatory requirement topics	PEM's
o	Distribution of regulatory requirement topics for technical review	WSE&I
o	Staff review regulatory requirement topics and prepare comments	Review staff/PEM's
o	Integrate comments into comment package	WSE&I
o	Internal QA and management review of comment package and finalize comments	WSE&I, PEM's, RLPD CNWRA PM
o	Prepare and transmit comment package to CNWRA	WSEI

Potential Regulatory Impact Reviews

1. The activities for conducting this review are as follows:

- o Prepare specific approach for the review
- o Review all regulatory requirement topics
- o Read staff comments on regulatory requirement topics and discuss with the lead reviewers for rulemaking, as needed
- o Prepare and conduct a briefing on preliminary views for BC's and Division Director, including a pre-briefing for the PEM's

ASSIGNMENTS

1. Those staff responsible for coordinating the overall review are as follows:

NRC/CNWRA Program Manager -	Joe Bunting
WSE&I Program Element Manager -	Phil Altomare
WSE&I Project Officers -	Mike Lee/Brian Thomas
RLPD Project Manager for CNWRA	Robert Johnson
Geologic Setting Program Element Manager -	Dave Brooks
EBS/RDCO Program Element Manager -	Jerry Pearring

Compliance and Technical Review

1. The compliance review will be performed by:

Phil Altomare	Robert Johnson	Seth Coplan
Mike Lee	Brian Thomas	Jerry Pearring
Dave Brooks		

2. Lead staff review assignments for the five (5) regulatory topics to be reviewed are as follows:

Rulemakings:
- E3 - Dan Fehringer-John Trapp/OGC
- E4 - Chuck Peterson/OGC
- E6 - Fred Ross/OGC

Other topical areas:
- E5 - John Trapp/OGC
- E17 - Dave Brooks/OGC

3. Additional CNWRA Project Officers and technical staff will be participating in the review.

Potential Regulatory Impact Review

1. Those staff designated to participate in this review are:

Brian Thomas (coordinator and regulatory uncertainties)
Ken Kalman (regulatory uncertainties)
Julia Corrado (institutional uncertainties)
Dan Fehringer
OGC staff, as assigned

SCHEDULES

1. The anticipated schedule for receipt of the regulatory topics from the CNWRA is summarized below:

Rulemakings:
E3 - TBD
E4 - TBD
E6 - TBD

Other topical areas:
E5 - TBD
E17 - 21 October 1988

2. The review of the applicable regulatory requirement topics will commence following their receipt and subsequent transmittal by the WSE&I Program Element Manager to the appropriate review staff.

3. The general schedule for the review of the regulatory requirement topics following their receipt is as follows:

Day	Review Activity
0	Receipt of regulatory requirement topics
1-3	Review staff review regulatory requirement topics and prepare staff comments
4-5	Integrate comments
6	Internal QA and management review
7-8	Prepare and transmit comments to CNWRA

TIME REPORTING

1. In reporting time expenditures for the review, review staff will be asked to report their time to the following numbers:

PPSSAS #	TAC #	Review Staff Activity
411171	L61700	CNWRA Program Element Management - Program Architecture (PEM's and NRC/CNWRA PM interaction with Center and coordination of review)
411171	L61701	Project Management (General project management and oversight by RLPD PM's)
411171	L61702	CNWRA Program Architecture Development for draft "E1" milestone review (All compliance and technical staff review activities)
9A1A	L20001	Budget/Five-Year Plan (All potential regulatory impact reviews)

RESOURCE ESTIMATES
(Enclosure 5 contains a detailed resource estimate as a guide.)
Compliance and Technical Review

1. The technical review by the lead reviewers and support reviewers should be about four (4) staff days to complete all of the review activities for each regulatory requirement topic. If additional time is needed for any review activity, it must be approved in advance by the WSE&I Program Element Manager, the RLPD Project Manager for the CNWRA, and the Division's line management.

2. It is estimated that 21 staff days or 0.1 FTE will be needed to complete the review for each of the five regulatory requirement topic including the technical review, integration, IQA review, and completion of comment package.

3. It is estimated 0.5 FTE will be needed to complete the total review of the five regulatory requirement topics.

Potential Regulatory Impact Reviews

1. It is estimated that 20 staff days or 0.1 FTE will be needed to complete the review for each regulatory requirement topic.

ENCLOSURE 1

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

OFFICE OF THE
SECRETARY

NOV 10 1988

MEMORANDUM FOR: CNWRA Program Management Staff

FROM: Michael P. Lee/Brian E. Thomas
Project Officers
Waste Systems Engineering and Integration

SUBJECT: CENTER MILESTONES FOR THE ACCELERATION OF THE PROGRAM ARCHITECTURE - NOVEMBER REPORT

Enclosed you will find the November report outlining the current status of all CNWRA element/subelement milestones related to the accelerated development of the Program Architecture. Those milestones submitted since the last progress report, which was issued in October, are as follows:

MILESTONES	ABBREVIATED DESCRIPTION	RECEIPT DATE
A3/A4	Finalize PASS structure through Process Block #15	10/31/88
E1	Element Activity via TOP-001-02 on Set #1	10/20/88 (partial)

We also wish to bring to your attention three additional points with respect to this table. First, in fulfilling the requirements of element/subelement milestones A3 and A4, the Center used regulatory requirement topic "E17" entitled "Adverse conditions: Geochemical Processes." However, our review suggested that the "E17" regulatory requirement topic did not completely demonstrate all of the requirements of these two ADP milestones and we requested a re-submission.

Second, final comments regarding Technical Operating Procedure (TOP)-001-03 ("Submission and Verification of Program Architecture Data Base Entries") are scheduled for transmittal to the Center on November 10, 1988, thereby closing-out activity related to milestones P4 and D9.

Third, the Center requested an NRC approval of an extension of the demonstration date for the so-called "proof-of-system," as represented by milestone R7, from October 21, 1988 to December 1, 1988. This extension was necessary to facilitate actions associated with the on-going development of the Program Architecture (PA) and Program Architecture Support System (PASS), and the desire of NRC management to preview the content of the PA relational data base prior to the actual demonstration and briefing.

It should be noted, though, that in granting this extension, the Center may have little or no opportunity to respond to requests for significant adjustments to the technical substance of the next milestone, R8.

13pp.

NOV 10 1988

Also of interest is information regarding the estimated status of completion of element/subelement milestones E1 through E2 that was recently reported in the CNWRA's Program Manager's Period Report for Period 13 - FY1988 (PMPR No. 88-13) for the reporting period September 3, 1988 through September 30, 1988. These element/subelement milestones are E1, P7, I12, I3, P6, A5, A6, and E2.

The estimated status of completion for these element/subelement milestones reported by the Center in the PMPR (dated October 14, 1988) is as follows:

MILESTONE	ABBREVIATED DESCRIPTION	STATUS
E1	Element Activity via TOP-001-02 on Set #1	40%
P7	PARC Review of Set #1 Regulatory Requirements	10%
I12	Input Example Data for R7 Deliverable ("Proof-of-System")	10%
I3	Integrate PARC Set #1 Data	0%
P6	PARC Review of Example Data R7 for Deliverable ("Proof-of-System")	0%
A5	Finalize PASS structure thru Process Block #22	75%
A6	Finalize PASS Documentation for R7 Deliverable	5%
E2	Element Activity via TOP-001-02 on Set #2	20%

Michael P. Lee/Brian E. Thomas
Project Officers
Waste Systems Engineering and
Integration

Enclosure: As stated

NOV 10 1988

CENTER/NRC MILESTONES-NOV

MEMORANDUM FOR: CNWRA Program Management Staff

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Project Officers
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E1	Element Activity via TOP-001-02 on Set #1	10/20/88 (partial)

We also wish to bring to your attention three additional points with respect to this table. First, in fulfilling the requirements of element/subelement milestones A3 and A4, the Center used regulatory requirement topic "E17" entitled "Adverse conditions: Geochemical Processes." However, our review suggested that the "E17" regulatory requirement topic did not completely demonstrate all of the requirements of these two ADP milestones and we requested a re-submission.

Second, final comments regarding Technical Operating Procedure (TOP)-001-03 ("Submission and Verification of Program Architecture Data Base Entries") are scheduled for transmittal to the Center on November 10, 1988, thereby closing-out activity related to milestones P4 and D9.

Third, the Center requested an NRC approval of an extension of the demonstration date for the so-called "proof-of-system," as represented by milestone R7, from October 21, 1988 to December 1, 1988. This extension was necessary to facilitate actions associated with the on-going development of the Program Architecture (PA) and Program Architecture Support System (PASS), and the desire of NRC management to preview the content of the PA relational data base prior to the actual demonstration and briefing.

It should be noted, though, that in granting this extension, the Center may have little or no opportunity to respond to requests for significant adjustments to the technical substance of the next milestone, R8.

Also of interest is information regarding the estimated status of completion of element/subelement milestones E1 through E2 that was recently reported in the CNWRA's Program Manager's Period Report for Period 13 - FY1988 (PMPR No. 88-13) for the reporting period September 3, 1988 through September 30, 1988. These element/subelement milestones are E1, P7, I12, I3, P6, A5, A6, and E2.

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MILESTONE	ABBREVIATED DESCRIPTION	STATUS
E1	Element Activity via TOP-001-02 on Set #1	40%
P7	PARC Review of Set #1 Regulatory Requirements	10%
I12	Input Example Data for R7 Deliverable ("Proof-of-System")	10%
I3	Integrate PARC Set #1 Data	0%
P6	PARC Review of Example Data R7 for Deliverable ("Proof-of-System")	0%
A5	Finalize PASS structure thru Process Block #22	75%
A6	Finalize PASS Documentation for R7 Deliverable	5%
E2	Element Activity via TOP-001-02 on Set #2	20%

Original Signed By
Michael P. Lee/Brian E. Thomas
Project Officers
Waste Systems Engineering and Integration

Enclosure: As stated

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MLee, HLEN	BThomas, RLPD	MMace, DC

C: HLEN	:RLPD	:HLEN	:	:	:	:
ME:MLee MPL	:BThomas	:PAltomare	:	:	:	:
TE: 11.07.88	: 11-06-88	: 11/8/88	:	:	:	:

NRC Internal Milestone Tab'e for CNWRA Products

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverab'e Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
D1, R1	Develop and approve TOP-001	6/17/88	N/A	2	PEM's [T]	5/23/88	TOP-001, Rev. 0 approved 6/12/88 Guidance to PARC on Revision of old Milestone (MS) 12
D2, R2	Modify the Center's process diagram and receive NRC concurrence	6/23/88	N/A	6	WSEI [T]	6/23/88	Process diagram approved following revisions requested by NRC
D3, R3	Develop and approve Program Architecture terminology	6/24/88	N/A	1	PEM's [T]	6/16/88	Basic definitions developed 6/16/88
P1, R4	Finish and approve specifications for membership of the Program Architecture Review Committee (PARC) and guidelines for review of Milestone 12 data	7/7/88	N/A	3	None	N/A	7/05/88(f); internal CNWRA memorandum establishing PARC--No comment necessary.
P2	Implement guidelines and specifications for the PARC to review the current PASS database (MS 12 review) by categorized regulations	7/12/88	N/A	4	PEM's [T]	7/12/88	TOP-001-01, Rev. 0 approved 7/12/88
I1	Integrate final approved process diagram, Program Architecture terminology, final schedule, PARC Guidance, and examples worked to-date for initiating further progress	7/14/88	N/A	1,2,3,6 7,8	PEM's [I]	8/05/88	Milestone updated 7/26/88
D4, R5	Prepare the preliminary specifications for the PA/PASS deliverables and presentations of R7, R8, and R9	7/21/88	20 partial 21 partial	13a	PEM's [T]	7/25/88 9/1/88	8/11/88(f)
I2	Integrate PARC input to update the PASS database	8/4/88	5 partial	4	WSEI [I]	8/3/88 9/1/88 9/3/88	8/12/88(p); 8/24/88(f)

NRC Internal Milestone Table for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
P3	Finalize review of WSEI MS 12, database	8/5/88	6 partial	5	WSEI [I]	9/3/88	8/15/88(p); 8/24/88(f)
D5	Define the new data fields and field inter-relationships	8/5/88	N/A	13a	WSEI [I]	9/1/88	Draft 7/21/88; 7/26/88(p), 8/12/88(f)
D6, R6	Finalize the specifications for the PA/PASS deliverables and presentations of R7, R8, and R9	8/5/88	20 partial 21 partial	13b	WSEI [I]	9/1/88	Draft 7/21/88; 8/12/88(f)
A1	Finalize PASS organizational structure, field definitions, and report generation for MS 12 data	8/12/88	N/A	N/A	WSEI [I]	9/1/88	8/10/88(f)
P4	Prepare draft guidelines and specifications for the PARC to review data input for Process Diagram Blocks 3 through 22 [TOP-001-03]	8/12/88	3-22 partial	12, 16	PEM's [I]	11/10/88	8/29/88(f); approved for use 9/9/88
A2	Finalize PASS organizational structure, field definitions, and report generation for elements of proof	8/17/88	20 partial 21 partial	13a partial	WSEI [I]	9/16/88	9/2/88(f)
D7	Finalize guidance for the Elements to ID and list elements of proof, uncertainties, uncertainty questions, information needs, and compliance determination methods	8/17/88	N/A	7 partial	PEM's [I]	9/1/88	Draft 6/26/88 TOP-001-02 approved 9/1/88 7/26/88(p); 8/15/88(f)

NRC Internal Milestone Chart for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
D9	Finalize PARC Guidance for Review of Element Data Input for Process Diagram Blocks 3-15 [TOP-001-03]	8/23/88	3-15 partial	15	WSEI [T]	11/10/88	8/29/88(f);approved for use 9/9/88
A3	Finalize PASS organizational structure, field definitions, and report generation for DOE compliance demonstration methods, NRC compliance determination methods, uncertainties, uncertainty questions, and information requirements	8/26/88	20 partial 21 partial	13a partial	WSEI [I]	10/28/88	10/21/88(f); Final comments pending re-submission of example to supplement E17
D8	Provide guidance to Elements on input format for DOE and state "issues," ranking, open items, and uncertainty reduction methods	8/26/88	N/A	7 partial	PEM's [T]	9/1/88	Draft 7/26/88; 8/15/88(f) TOP-001-02 approved 9/1/88
P5	Finalize the PARC guidelines and initiate PARC review of data input for the old WSEI Milestone 19 (for one complete data entry "proof-of-system") (for Process Diagram Blocks 3-22) and for other data (for Process Diagram Blocks 3-15)	9/2/88	3-22 partial	12, 16	WSEI PEM's [T]	9/12/88	
A4	Finalize PASS organizational structure, field definitions, and report generation for DOE, State and Tribe "issues," etc; ranking open items; and uncertainty reduction methods	9/9/88	20 partial 21 partial	13a partial	WSEI [I]	10/28/88	10/21/88(f); Final Comments pending re-submission of example to supplement topic E17

NRC Internal Milestone Table for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
E1	Identify the elements of proof, uncertainties, etc. for regulatory requirement (See D7 and D8) (Set 1)* (Process Diagram Blocks 3-15)	9/16/88	3-15 partial	10 partial	PEM's Staff [I]	10/31/88 11/2/88	Estimated status of completion completion by Center (10/14/88) is 40%; 10/20/88(p) Topic E17 in in review through A3/A4
P7	Review, and revise (correct)(Set 1)* regulatory requirements, elements of proof, compliance determination methods, information requirements uncertainties, uncertainty questions, State and DOE issues, flagged open items, NRC actions, other action parties, and uncertainty reduction methods	9/26/88	3-15 partial	12	WSEI PEM's [I]		Estimated status of completion by the Center (10/14/88) is 10%
I12	Input example data for proof-of-system demonstrations	9/26/88	3-22 partial	16	PEM's [I]		Do.
I3	Integrate PARC reviewed data (Set 1)	9/27/88	3-15 partial	11, 12 partial	PEM's [I]		Estiamted status of completion by Center (10/14/88) is 0%
A5	Finalize PASS organizational structure, field definitions, and report generation for costs, schedules, and lead times; alternative and tradeoff programs; research plans; and critical path control.	9/30/88	20 partial 21 partial	13a partial	WSEI PEM's [I]		Estimated status of completion by Center (10/14/88) is 75%
A6	Finalize PASS documentation for informal report and presentation	9/30/88	20	16	WSEI [I]		Estimated status of completion by Center (10/14/88) is 5%

NRC Internal Milestone Table for CMWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CMWRA	Notes/Comments
P6	Complete PARC review of example data for proof-of-system demonstrations (I12)	9/30/88	3-22 partial	4, 16	PEM's [I]		Estimated status of completion by Center (10/14/88) is 5%
E2	Identify the elements of proof, uncertainties, etc. for regulatory requirement (Set 2)* (Process Diagram Blocks 3-15)	9/30/88	3-15 partial	10 partial	PEM's Staff [I]		Estimated status of completion by Center (10/14/88) is 20%
P8	Review, and revise (correct)(Set 2)* regulatory requirements, elements of proof, compliance determination methods, information requirements, uncertainties, uncertainty questions, State and DOE issues, flagged open items, NRC actions, other action parties, and uncertainty reduction methods	10/11/88	3-15 partial	12	PEM's [I]		
I4	Integrate PARC reviewed data (Set 2)	10/12/88	3-15 partial	11, 12 partial	WSEI [I]		
D10	Complete the revision of the PARC guideline as necessary	10/12/88	3-15 partial	12 revisions	WSEI [I]		Revisions based on review of P4, D9, and E1

NRC Internal Milestone Table for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
E3	Identify the elements of proof, uncertainties, etc. for regulatory requirement (Set 3)* (Process Diagram Blocks 3-15)	10/28/88	3-15 partial	10 partial	PEM's Staff [I]		
P9	Review, and revise (correct)(Set 3)* regulatory requirements, elements of proof, compliance determination methods, information requirements, uncertainties, uncertainty questions, State and DOE issues, flagged open items, NRC actions, other action parties, and uncertainty reduction methods	11/8/88	3-15 partial	12	WSEI PEM's [I]		
I5	Integrate PARC reviewed data (Set 3)	11/9/88	3-15 partial	11, 12 partial	WSEI [I]		
E4	Identify the elements of proof, uncertainties, etc. for regulatory requirement (Set 4)* (Process Diagram Blocks 3-15)	11/11/88	3-15 partial	10 partial	PEM's Staff [I]		
P10	Review, and revise (correct)(Set 4)* regulatory requirements, elements of proof, compliance determination methods, information requirements, uncertainties, uncertainty questions, State and DOE issues, flagged open items, NRC actions, other action parties; and uncertainty reduction methods	11/21/88	3-15 partial	12	WSEI PEM's [I]		

NRC Internal Milestone Table for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
I6	Integrate PARC reviewed data (Set 4)	11/21/88	3-15 partial	11, 12 partial	WSEI [I]		
D11	Updated version the PARC guidelines as necessary	11/21/88	N/A	16 partial	WSEI PEM's [T]		
I7	Integrated and "certified" data sets (1-4) for deliverable	11/23/88	3-15	11, 12	WSEI [I]		Earlier review of draft 8/11/88
R7	Briefing, if requested, and report of the example proof-of-system data (input and integrated by WSEI, see I12). Originally covered in old WSEI Milestone 19	12/01/88	3-22 partial	15	PEM's [C]		Earlier review of draft 8/11/88; Due date originally 10/21/88
R8	Present a report to the NRC on recommended rulemaking needs for repository activities	12/21/88	3-15	11,12	WSEI PEM's [C]		Earlier review of draft 8/11/88
R9	Present a report to the NRC on recommended SCP/review, audit, and research activities	12/21/88	N/A	N/A	WSEI PEM's [C]		Earlier review of draft 8/11/88
A7	Complete an update of the PASS structure as necessary	1/20/89	21	16	PEM's WSEI [I]		
D12	Guide Elements for rest of process inputs (Process Diagram Blocks 16-22)	3/17/89	N/A	16 partial	PEM's [T]		

NRC Internal Milestone Table for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
E5	Identify the elements of proof, uncertainties, etc. for sets 1-4 data (Process Diagram Blocks 16-22) and for other regulatory requirement (Set 5)* (Process Diagram Blocks 3-22)	4/12/89	3-22 partial	16 partial	PEM's [I]		
P11	PARC review of input data Set 5*	4/13/89	3-22 partial	16	WSEI [I]		
I8	Integrate PARC reviewed data (Set 5)	4/14/89	3-22 partial	16	WSEI [I]		
E6	Identify the elements of proof, uncertainties, etc. for sets 1-4 data (Process Diagram Blocks 16-22) and for other regulatory requirement (Set 6)* (Process Diagram Blocks 3-22)	5/10/89	3-22 partial	16 partial	PEM's [I]		
P12	PARC review of input data Set 6*	5/11/89	3-22 partial	16	WSEI [I]		
I9	Integrate PARC reviewed data (Set 6)	5/12/89	3-22 partial	16	WSEI [I]		
E7	Identify the elements of proof, uncertainties, etc. for sets 1-4 data (Process Diagram Blocks 16-22) and for other regulatory requirement (Set 7)* (Process Diagram Blocks 3-22)	6/7/89	3-22 partial	16 partial	PEM's [I]		
P13	PARC review of input data Set 7*	6/8/89	3-22 partial	16	WSEI [I]		

NRC Internal Milestone Table for CNWRA Products (continued)

Center Milestone	Center Milestone Description	Center Milestone Due Date	Process Diagram Block No.	12/21/88 Deliverable Step No.	NRC Action Req'd.	Comments Sent To CNWRA	Notes/Comments
I10	Integrate PARC reviewed data (Set 7)	6/9/88	3-22 partial	16	WSEI [I]		
E8	Identify the elements of proof; uncertainties, etc. for sets 1-4 data (Process Diagram Blocks 16-22) and for other regulatory requirement (Set 8)* (Process Diagram Blocks 3-22)	7/3/89	3-22 partial	16 partial	PEM's [I]		
P14	PARC review of input data Set 8*	7/6/89	3-22 partial	16	WSEI [I]		
I11	Integrate PARC reviewed data (Set 8)	7/7/89	3-22 partial	16	WSEI [I]		

*NOTE: Each set of regulatory requirements is a workable subset of the total regulations selected for Element review.

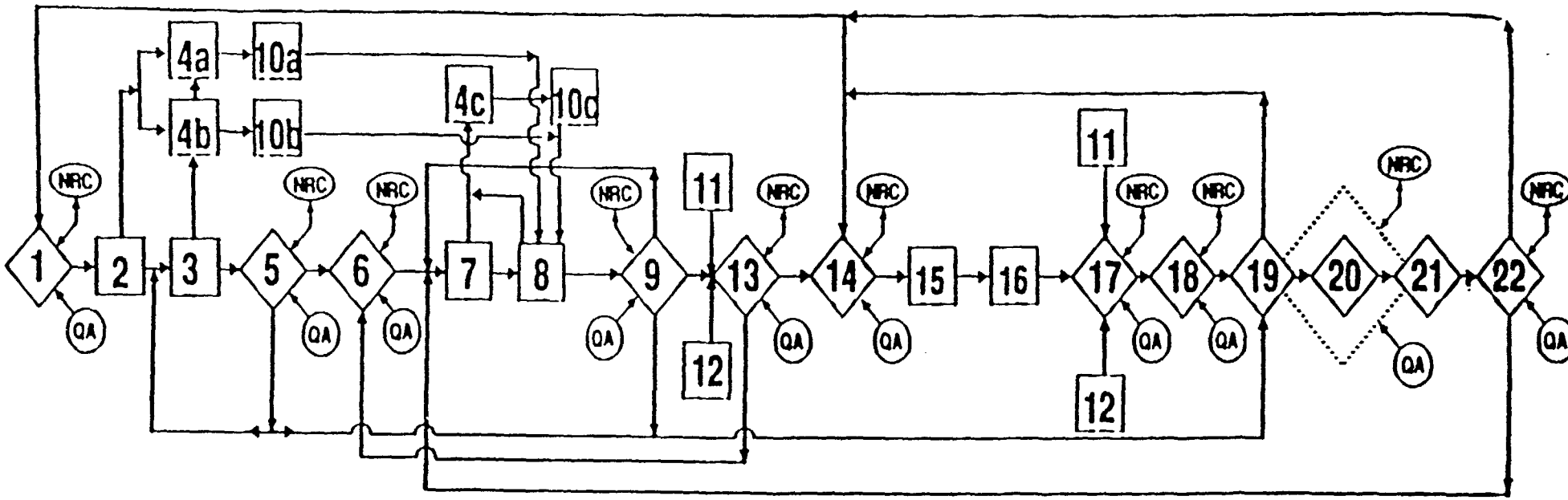
LEGEND

CENTER MILESTONE ACTIVITY CODES:
P=PARC/QA Activities
A=ADP Activities
E=Element Activities
D=New WSE&I Directives/Developments
I=New WSE&I Integration Points
R=New WSE&I Reporting Activities

COMMENT DATE CODES:
p=Partial fulfillment of milestone (receipt)
f=Complete fulfillment of milestone (receipt)

NRC ACTION REQUIRED CODES:
WSEI=Waste Systems Engineering & Integration Program Element
PEM's=Program Element Managers

REVIEW TYPE CODES:
[C]=Contract Deliverables/1 week turnaround
[T]=Controlled Technical Guidance Documents/24-48 hour turnaround
[I]=Internal Center Milestones/1 week turnaround



X PHASE OF THE PROCESS REQUIRING WORK AT AND INPUT FROM THE PROGRAM ELEMENTS

X PHASE OF THE PROCESS REQUIRING INTEGRATION

NRC REVIEW AND APPROVAL BY NUCLEAR REGULATORY COMMISSION

QA REVIEW AND APPROVAL BY QUALITY ASSURANCE

1. IDENTIFY POTENTIALLY APPLICABLE REGULATIONS
2. ANALYZE REGULATORY REQUIREMENTS
3. IDENTIFY AND LIST ELEMENTS OF PROOF
4a. IDENTIFY AND DESCRIBE INSTITUTIONAL UNCERTAINTIES
4b IDENTIFY AND DESCRIBE REGULATORY UNCERTAINTIES
4c. IDENTIFY AND DESCRIBE TECHNICAL UNCERTAINTIES
5. INTEGRATE AND REVIEW REGULATORY REQUIREMENTS, AND INTEGRATE, REVIEW, AND REVISE ELEMENTS OF PROOF
6. SELECT SUBSET OF REGULATIONS FOR FURTHER ANALYSIS BASED ON TIME CRITICAL NATURE
7. IDENTIFY BASIC APPROACH FOR COMPLIANCE DETERMINATION METHODS (REVISE AT SUBSEQUENT ITERATIONS)
8. IDENTIFY INFORMATION REQUIREMENTS
9. INTEGRATE, REVIEW, AND REVISE COMPLIANCE DETERMINATION METHODS, ELEMENTS OF PROOF, AND INFORMATION REQUIREMENTS
10a. IDENTIFY INSTITUTIONAL UNCERTAINTY QUESTIONS
10b. IDENTIFY REGULATORY UNCERTAINTY QUESTIONS
10c IDENTIFY TECHNICAL UNCERTAINTY QUESTIONS
11. OBTAIN DOE "ISSUES", INFORMATION NEEDS AND UNCERTAINTIES
12. OBTAIN STATE, TRIBE, AND OTHER AFFECTED PARTIES "ISSUES", INFORMATION NEEDS AND UNCERTAINTIES
13 INTEGRATE, CONSOLIDATE, AND RANK UNCERTAINTIES AND UNCERTAINTY QUESTIONS (INCLUDING DOE AND STATE ITEMS)
14 IF UNCERTAINTY, UNCERTAINTY QUESTION, OR INFORMATION REQUIREMENT IS UNRESOLVED, FLAG AS OPEN ITEM; SELECT ITEMS FOR NRC ACTION; IDENTIFY OTHER ACTION PARTIES
15. IDENTIFY UNCERTAINTY REDUCTION METHODS AND RELATED INFORMATION REQUIREMENTS; SPECIFY ALTERNATE NRC PROGRAMS FOR UNCERTAINTY REDUCTION
16. DEVELOP COSTS, SCHEDULES, AND LEAD TIMES FOR NRC PROGRAMS
17. ANALYZE ALTERNATIVES AND NRC PROGRAM TRADEOFFS
18. RECOMMEND NRC PROGRAM INCLUDING OVERALL RESEARCH PROGRAM PLAN
19. DEVELOP AND DISPLAY NETWORK AND CRITICAL PATH FOR EACH REGULATORY REQUIREMENT
20. DEVELOP AND DISPLAY NETWORK FOR TOTAL PROGRAM
21. CONTROL AND DOCUMENT PROGRAM STRUCTURE AND CHANGES
22. CONDUCT NRC PROGRAM

FIGURE 1. PROCESS DIAGRAM FOR DEVELOPING AND MAINTAINING THE PROGRAM ARCHITECTURE

ENCLOSURE 2

ENCLOSURE 3

CONCEPTUAL REQUIREMENTS FOR THE PROPOSED DECEMBER 21, 1988 DELIVERABLE

PURPOSE

The thrust of the proposed acceleration of the program architecture development is to time-phase its development so as to produce, to the extent practical, interim products that assist the NRC management and staff in meeting the programmatic production schedule. To that end, it is desired that the development focus first on those regulatory requirements that pertain to siting. The desired outcome is to produce 1) an analysis and evaluation of those regulatory, institutional and technical uncertainties pertaining to siting, identifying those recommended for resolution by rulemaking, and their relative priority, together with supporting rationale; and 2) an analysis and evaluation of the regulatory requirements and their relative importance to siting, that could be an aid to identifying those aspects of the Site Characterization Plan that should have priority consideration in the NRC staff review. It is understood that certain risks are associated with this approach in that analysis, recommendations and decisions will be made before the systems engineering analysis is completed. NRC recognizes and accepts this risk. Therefore, the deliverable will be a draft only.

SPECIFIC CONCEPTS FOR INCLUSION IN THE DELIVERABLE

NRC suggests that the discussion of requirements for the proposed 12/21/88 milestone be undertaken in conjunction with the requirements for the September 1988 milestone.

September 1988 Milestone

1. Take at least one regulatory requirement through the complete 24 process blocks as a "proof of system".

2. Complete PASS organizational structure - fields defined and capability to generate reports.

3. All data that has been reviewed by PARC loaded in the PASS.

4. NRC access to PASS.

December 1988 Milestone

1. Site constrained regulations identified.

2. Site constrained regulatory requirements identified, analyzed, and prioritized.

3. Site constrained elements of proof identified, analyzed, evaluated, and prioritized.

4. Site constrained regulatory and institutional uncertainties identified, analyzed, evaluated, and prioritized.

5. Regulatory and institutional uncertainty reduction methods postulated, analyzed, and evaluated.

6. Results of previous steps loaded in PASS.

7. Recommendations for rulemaking, priorities, and supporting rationale.

8. Recommendations for focus of staff review of the Site Characterization plan with supporting rationale.

9. Site constrained technical uncertainties and uncertainty reduction methods developed to the extent practical.

ENCLOSURE 4

Center for Nuclear Waste Regulatory Analyses

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August 15, 1988

U.S. NUCLEAR REGULATORY COMMISSION
ATTN: Mr. Philip M. Altomare
Division of High-Level Waste Management
WF1
Mail Stop 4-H-3
Washington, D. C. 20555

Subject: Completion of Milestones D7 and D8

Dear Mr. Altomare:

This letter transmits a Technical Operating Procedure in fulfillment of the subject Center milestones (defined in the letter from J. Latz to M. Mace, July 26, 1988). These Center intermediate milestones are:

D7 Finalize guidance to Elements to identify and list Elements of Proof, Uncertainties, Uncertainty Questions, Information Needs, and Compliance Determination Methods

D8 Provide guidance to Elements on input format for DOE and State "issues", ranking, open items, and uncertainty reduction methods.

These Milestones are fulfilled by the attached procedure TOP-001-02 "Program Architecture Relational Database Work Instruction". This procedure has been promulgated following NRC staff review of the draft version. Note that the procedure is anticipated to undergo revision from time-to-time as experience is gained in its use. Furthermore, the WSE&I Subelement will develop and promulgate additional guidance in the form of examples and/or will provide training, if it becomes necessary. Specific ranking/prioritization methodologies will be identified, evaluated, and employed in support of the Milestones R8 and R9 reports. This activity is distinct from, but will have its results input to the Program Architecture relational database.

Washington Office • Crystal Gateway One, Suite 1102 • 1235 Jefferson Davis Hwy. • Arlington, Virginia, 22202-3293

Please contact me if you have any questions regarding this matter.

Sincerely yours,

for Allen R. Whiting
Director - SE&I

ARW/y

cc: M. Mace
J. Bunting, with 4 copies
J. Latz
Center staff