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Page 1 of 1

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1	1	Cog.Eng. T. L. Moore	J L Moore	2/27/96	H6-11						
1		Cog. Mgr. J. D. Thomson	[signature]	2/27/96							
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J L Moore 2/27/96 Signature of EDT Originator Date	Authorized Representative for Receiving Organization Date	[signature] 2/27/96 Cognizant Manager Date	Ctrl. No. [] Approved [] Approved w/comments [] Disapproved w/comments

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Engineering Task Plan TWRS Technical Baseline Completion

T. L. Moore
Westinghouse Hanford Company, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-87RL10930

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Abstract: The Tank Waste Remediation System (TWRS) includes many activities required to remediate the radioactive waste stored in underground waste storage tanks. These activities include routine monitoring of the waste, facilities maintenance, upgrades to existing equipment, and installation of new equipment necessary to manage, retrieve, process, and dispose of the waste. In order to ensure that these multiple activities are integrated, cost effective, and necessary, a sound technical baseline is required from which all activities can be traced and measured. The process by which this technical baseline is developed will consist of the identification of functions, requirements, architecture, and test (FRAT) methodology. This process must be completed for TWRS to a level that provides the technical basis for all facility/system/component maintenance, upgrades, or new equipment installation.

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CONTENTS

1.0 INTRODUCTION 1

2.0 SCOPE 1
2.1 OBJECTIVES 1

3.0 DESCRIPTION 2

4.0 SCHEDULE 2

ATTACHMENT 1 3

ATTACHMENT 2 4

ATTACHMENT 3 5

ENGINEERING TASK PLAN
TWRS TECHNICAL BASELINE COMPLETION

1.0 INTRODUCTION

The Tank Waste Remediation System (TWRS) includes many activities required to remediate the radioactive waste stored in underground waste storage tanks. These activities include routine monitoring of the waste, facilities maintenance, upgrades to existing equipment, and installation of new equipment necessary to manage, retrieve, process, and dispose of the waste. In order to ensure that these multiple activities are integrated, cost effective, and necessary, a sound technical baseline is required from which all activities can be traced and measured. The process by which this technical baseline is developed will consist of the identification of functions, requirements, architecture, and test (FRAT) methodology. This process must be completed for TWRS to a level that provides the technical basis for all facility/system/component maintenance, upgrades, or new equipment installation.

2.0 SCOPE

2.1 OBJECTIVES

On or before March 2, 1996:

1. Demonstrate traceability of TWRS Functions and Requirements Baseline to U.S. Department of Energy (DOE), Richland Operations Office (RL) approved mission requirements as contained within the *TWRS Mission Analysis Report*, WHC-SD-WM-MAR-008 (Knutson 1995)[1].

2. Demonstrate that the Baseline contains system definition through the TWRS Function Level 3, including the FRAT methodology.

3. Demonstrate that the Baseline contains system definition through the TWRS Function Level 4, including functions and requirements.

4. Demonstrate traceability of changes to the Baseline identified in the DOE, Headquarters (HQ) Systems Requirements Review (SRR) and the current revision of the RL SRR Action Plan.

5. Establish in the Baseline database a correlation of functions to Work Breakdown Structure (WBS) program elements.

6. Obtain approval of the Baseline from the WHC TWRS Program Manager.

7. Obtain acceptance of the Baseline by the responsible technical experts within RL.

---

[1] Knutson, 1996, Tank Waste Remediation System Mission Analysis Report, WHC-SD-WM-MAR-008, Rev. 0, Westinghouse Hanford Company, Richland, Washington.

On or before June 1, 1996:

1. Complete development and technical reviews of the Baseline down to a level that provides technical bases for projects (technical assessment of existing facility systems, facility/system upgrades, or new facility/system installation). This includes the FRAT methodology, which is ready for approval by the WHC TWRS Program Manager.

2. Provide document formats for Functions and Requirements and Interface Control Documents that are user friendly as judged by WHC gatekeepers and RL technical experts.

3. Provide a status on any SRR actions not completed by March 2, 1996.

3.0 DESCRIPTION

A Systems Engineering Baseline Team (SEBT) has been formed which is chartered to facilitate development and deployment of integrated technical basis documentation for the TWRS Program (see Attachment 1). This team is identified in Attachment 2 along with the main WHC program/project and RL interfaces. The SEBT members will work with staff from the appropriate program offices and technical organizations within TWRS, as well as the responsible RL technical experts to ensure that a TWRS baseline is developed, reviewed, approved, and accepted as described in Section 2.1. The SEBT will provide support to the program offices as well as leading the integration of all activities necessary to complete the task as described in Section 2.0. This includes arranging for the appropriate WHC and WHC/DOE integrated reviews, documenting changes to the baseline resulting from these reviews, maintaining configuration control over the baseline, identifying and resolving issues arising from the reviews, and any other integrating/coordinating task that is necessary to ensure successful completion of the objectives of this activity.

4.0 SCHEDULE

See Attachment 3.

ATTACHMENT 1

1.0 CHARTER

The Systems Engineering Baseline Team (SEBT) is chartered to facilitate development and deployment of integrated technical basis documentation for the Tank Waste Remediation System (TWRS) program. The SEBT provides up-front leadership to integrate the 4.2.X level Functions and Requirements baseline for TWRS to ensure that all TWRS activities have a documented technical basis necessary to demonstrate progress toward accomplishing the TWRS mission.

2.0 RESPONSIBILITIES

2.1 Produce TWRS functions and requirements documents that are user friendly and easily accessed and used by engineering staff. This will include disposition of TWRS technical basis integration issues.

2.2 Provide and status a schedule that will ensure completion of the TWRS Functions and Requirements Baseline to a level where projects and upgrade and maintenance activities can be defined. This includes identification of issues and trade studies required to support activity definition.

2.3 Support the Contract Support Team activities as necessary to issue and award Phase I Privatization contracts.

2.4 Work with the program offices to provide integration support necessary to develop and document the TWRS functions and requirements baseline.

2.5 Provide leadership to conduct necessary briefings to complete proper reviews and gain acceptance of the TWRS functions and requirements baseline.

2.6 Identify critical areas in the program that require improved technical integration activities.

SYSTEMS ENGINEERING BASELINE TEAM
Tom Moore, Manager

Carol–Lynne Pool – Secretary
Keith Carpenter – Team Lead
Carolyn Graves
Gurdhian Singh – Electrical Utilities Trade Study
Pushpa Bhatia
Roger Webb
Mike Johnson – Disposal Programs/Engineering Chief Systems Engineer
Shafik Rifaey – Design Authority, Transition Projects
Vince Saladin – RL Privatization Systems Engineering
Rob Gilbert – RL Privatization Systems Engineering

4.2.1 – MANAGE TANK WASTE

Dan Acree – Lead
Scott Klimper
Dale Salsman, WHC SE

Shafik Rifaey
WHC Gatekeeper
Dave Nearing
Delegated Gatekeeper

RL Reviewers:

Ami Sidpara	*4.2.1.1*
Steve Burnum	*4.2.1.2*
Ami Sidpara	*4.2.1.3*
Andy Hon	*4.2.1.4*

4.2.2 – RETRIEVE TANK WASTE

Stu Krieg – Lead
Bob Rieck
Dale Salsman, WHC SE

Kayle Boomer
WHC Gatekeeper

RL Reviewers:
Bruce Nicoll
Wendell Wrzesinski

4.2.3 – PROCESS TANK WASTE

Bruce Zimmerman – Lead
Gar Norman, WHC SE

Mike Johnson
WHC Gatekeeper

RL Reviewers:
Rob Gilbert – Lead

4.2.4 – DISPOSE TANK WASTE

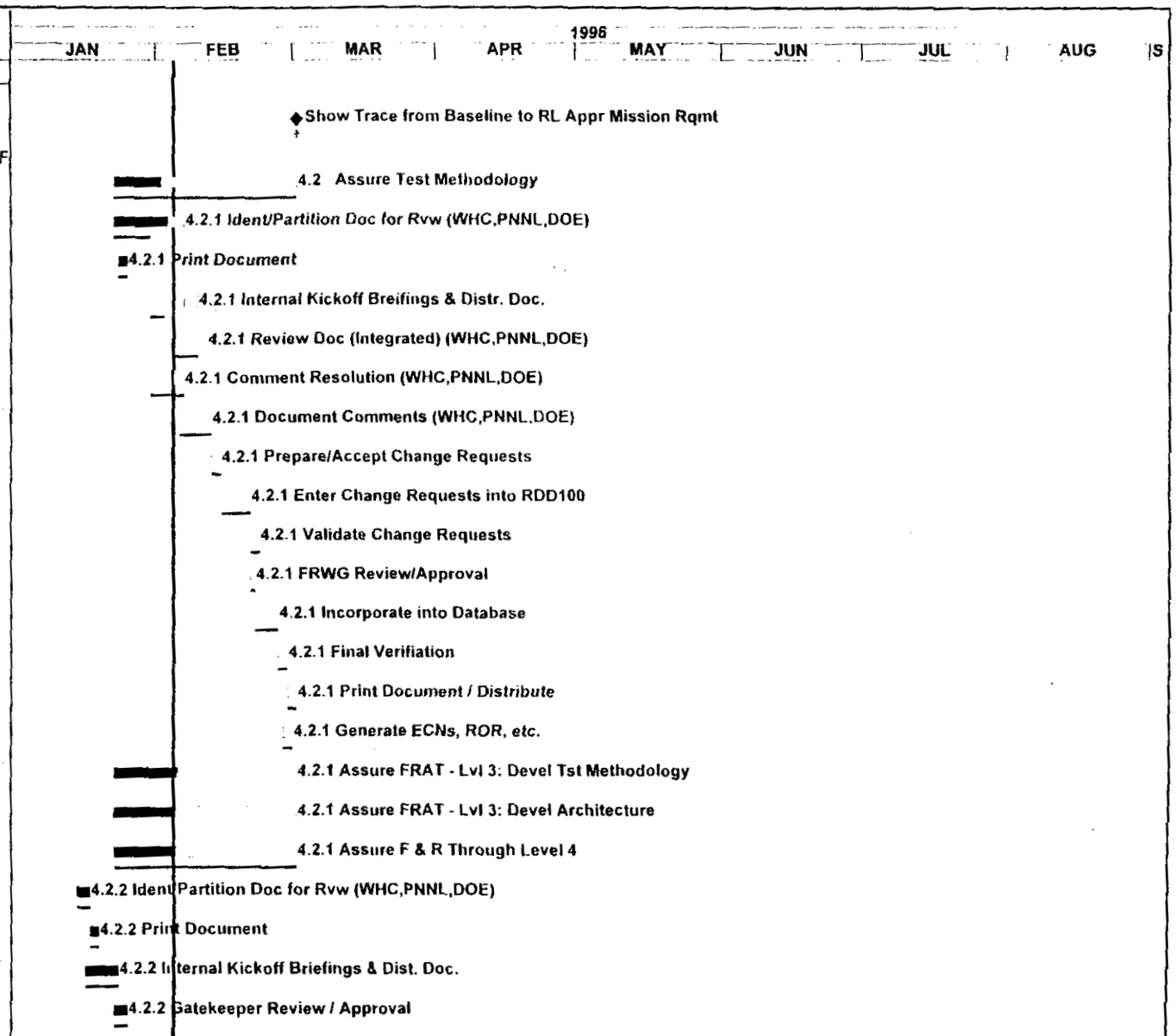
Pete Titzler – Lead
Bill Brantley
Frank Orsag, WHC SE

Ron Claghorn
WHC Gatekeeper

RL Reviewers:

Phil LaMont	*4.2.4*
Dan Button	*4.2.4.1*
Neil Brown	*4.2.4.2*
Craig West	*4.2.4.3*

Activity ID	Early start	Early finish
PBFC: 96-425		
CONDITION 1:		
FR 004		01MAR96*
CONDITION 2: TWRS F&R, Architecture, Test (F		
FR 009	23JAN96A	01MAR96
FR 013	23JAN96A	06FEB96
FR 014	24JAN96A	25JAN96A
FR 015	07FEB96	09FEB96
FR 017	12FEB96	09FEB96
FR 018	05FEB96*	06FEB96
FR 019	13FEB96	12FEB96
FR 021	13FEB96	14FEB96
FR 022	15FEB96	20FEB96
FR 023	21FEB96	22FEB96
FR 024	21FEB96	21FEB96
FR 025	22FEB96	26FEB96
FR 026	27FEB96	28FEB96
FR 027	29FEB96	01MAR96
FR 028	28FEB96	29FEB96
FR 029_1	23JAN96A	01MAR96
FR 029_2	23JAN96A	01MAR96
FR 030	23JAN96A	01MAR96
FR 034	15JAN96A	17JAN96A
FR 035	18JAN96A	19JAN96A
FR 036	17JAN96A	23JAN96A
FR 037	23JAN96A	25JAN96A



Project Start	01OCT95	Early Bar
Project Finish	05JUN96	Target Bar
Data Date	05FEB96	Progress Bar
Plot Date	31JAN96	Critical Activity

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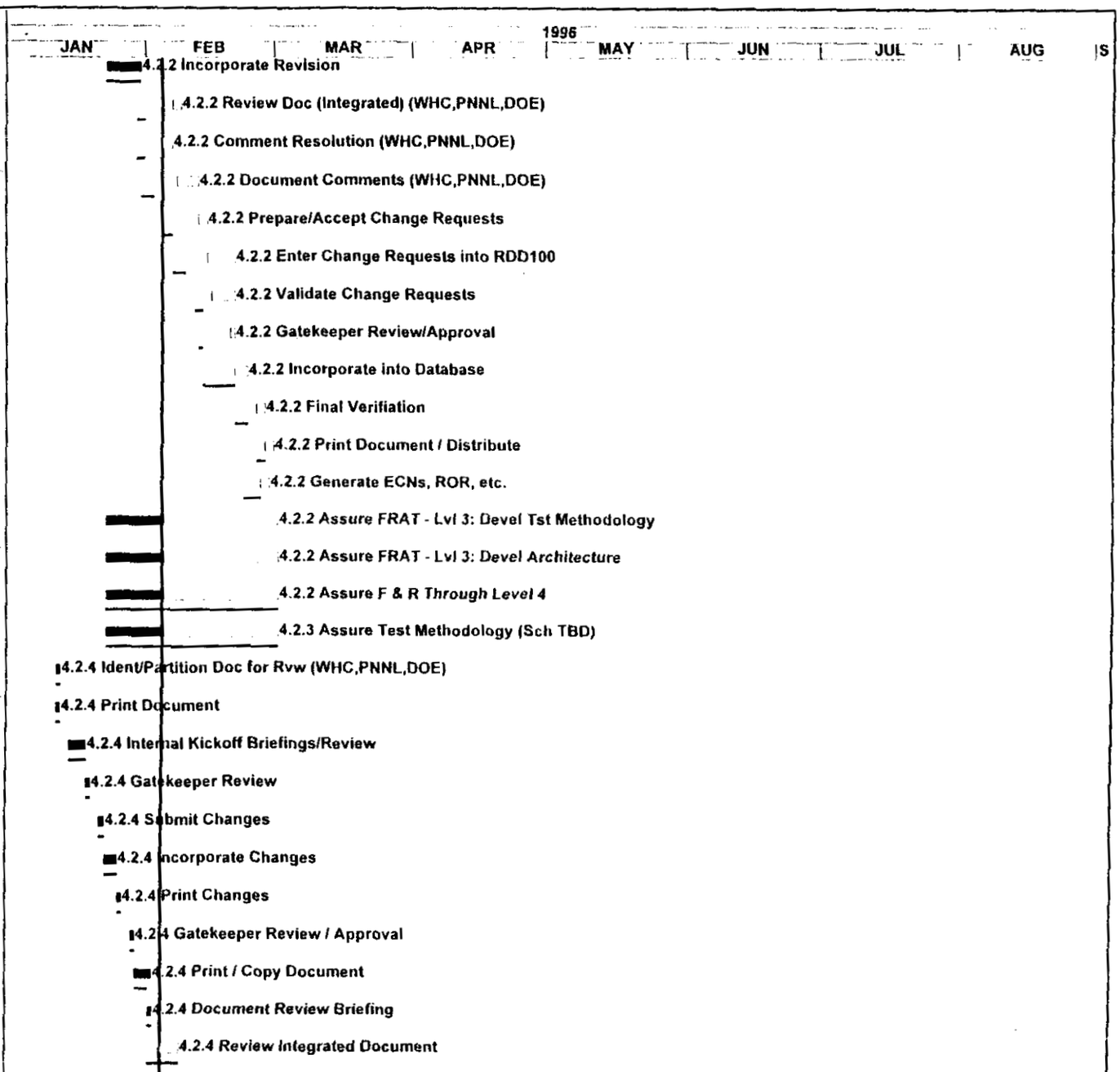
TM03

Sheet 1 of 7

TWRS F/R Schedule

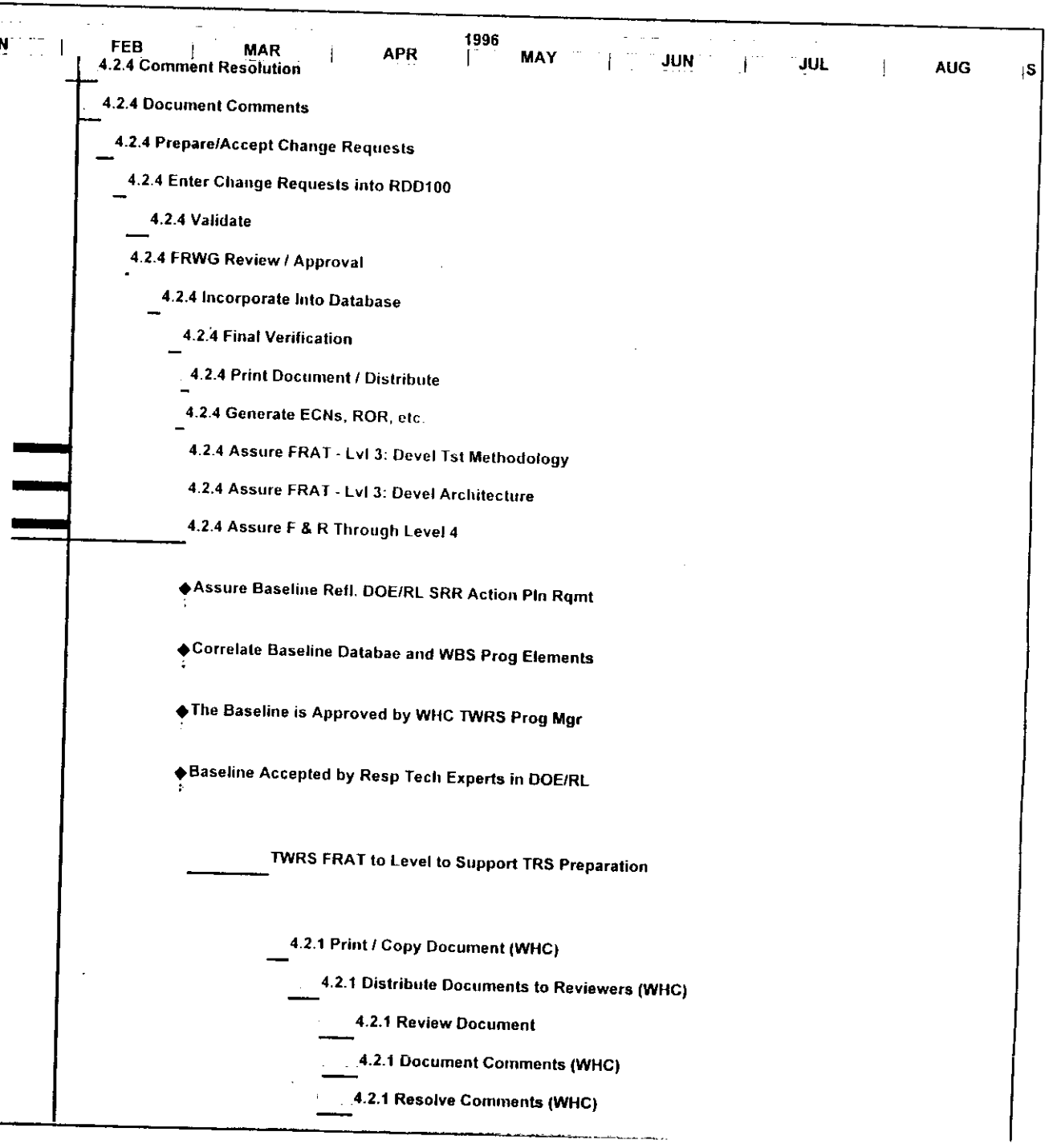
SCHEDULE AS OF 2/2/96

Activity ID	Early start	Early finish
FR 038	23JAN96A	30JAN96A
FR 040	07FEB96*	08FEB96
FR 041	05FEB96	06FEB96
FR 042	08FEB96	12FEB96
FR 044	13FEB96	14FEB96
FR 045	15FEB96	20FEB96
FR 046	16FEB96	20FEB96
FR 047	20FEB96	20FEB96
FR 048	21FEB96	23FEB96
FR 049	26FEB96	27FEB96
FR 050	28FEB96	29FEB96
FR 051	27FEB96	28FEB96
FR 052_1	23JAN96A	01MAR96
FR 052_2	23JAN96A	01MAR96
FR 053	23JAN96A	01MAR96
FR 056	23JAN96A	01MAR96
FR 060	12JAN96A	12JAN96A
FR 061	12JAN96A	12JAN96A
FR 062	15JAN96A	18JAN96A
FR 063	19JAN96A	19JAN96A
FR 065	22JAN96A	22JAN96A
FR 066	23JAN96A	25JAN96A
FR 067	26JAN96A	26JAN96A
FR 068	29JAN96A	29JAN96A
FR 069	30JAN96A	02FEB96A
FR 071	02FEB96A	02FEB96A
FR 072	05FEB96	08FEB96



Sheet 2 of 7

Activity ID	Early start	Early finish
FR 073	05FEB96	08FEB96
FR 074	06FEB96	09FEB96
FR 076	09FEB96	12FEB96
FR 077	13FEB96	15FEB96
FR 078	16FEB96	20FEB96
FR 079	16FEB96	16FEB96
FR 080	21FEB96	23FEB96
FR 081	26FEB96	28FEB96
FR 082	29FEB96	01MAR96
FR 083	28FEB96	29FEB96
FR 084_1	23JAN96A	01MAR96
FR 084_2	23JAN96A	01MAR96
FR 085	23JAN96A	01MAR96
CONDITION 3:		
FR 088		01MAR96*
CONDITION 4:		
FR 091		01MAR96*
CONDITION 5:		
FR 094		01MAR96*
CONDITION 6:		
FR 097		01MAR96*
TWRS FRAT to Level to Support TRS Preparation		
FR 101	04MAR96*	21MAR96
TWRS FRAT REVIEW / ACCEPTANCE		
Section 4.2 FRAT		
FR 107	22MAR96	26MAR96
FR 108	27MAR96	02APR96
FR 109	03APR96	10APR96
FR 110	04APR96	11APR96
FR 111	03APR96	10APR96



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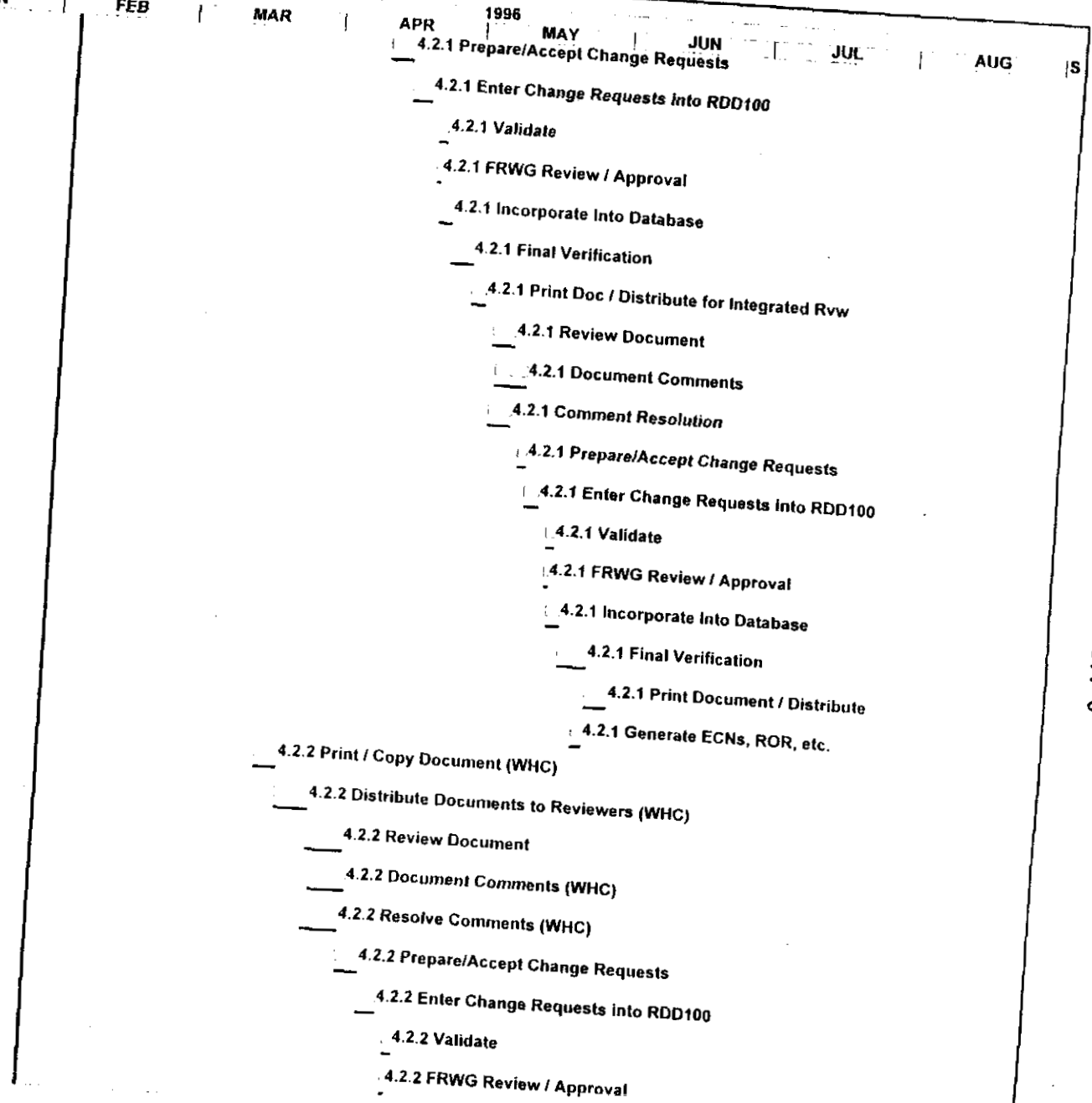
FR 113	11APR96	15APR96
FR 114	16APR96	19APR96
FR 115	22APR96	23APR96
FR 116	22APR96	22APR96
FR 117	23APR96	25APR96
FR 118	26APR96	30APR96
FR 119	01MAY96	03MAY96
FR 121	06MAY96	10MAY96
FR 122	07MAY96	13MAY96
FR 123	06MAY96	10MAY96
FR 125	13MAY96	14MAY96
FR 126	15MAY96	17MAY96
FR 127	20MAY96	21MAY96
FR 128	20MAY96	20MAY96
FR 129	21MAY96	23MAY96
FR 130	24MAY96	29MAY96
FR 131	30MAY96	03JUN96
FR 132	28MAY96	29MAY96
FR 136	22MAR96	26MAR96
FR 137	27MAR96	02APR96
FR 138	03APR96	10APR96
FR 139	04APR96	11APR96
FR 140	03APR96	10APR96
FR 142	11APR96	15APR96
FR 143	16APR96	19APR96
FR 144	22APR96	23APR96
FR 145	22APR96	22APR96



Sheet 4 of 7

Activity ID	Early start	Early finish
FR 146	23APR96	25APR96
FR 147	26APR96	30APR96
FR 148	01MAY96	03MAY96
FR 150	06MAY96	10MAY96
FR 151	07MAY96	13MAY96
FR 152	06MAY96	10MAY96
FR 154	13MAY96	14MAY96
FR 155	15MAY96	17MAY96
FR 156	20MAY96	21MAY96
FR 157	20MAY96	20MAY96
FR 158	21MAY96	23MAY96
FR 159	24MAY96	29MAY96
FR 160	30MAY96	03JUN96
FR 161	28MAY96	29MAY96
FR 165	22MAR96	26MAR96
FR 166	27MAR96	02APR96
FR 167	03APR96	10APR96
FR 168	04APR96	11APR96
FR 169	03APR96	10APR96
FR 171	11APR96	15APR96
FR 172	16APR96	19APR96
FR 173	22APR96	23APR96
FR 174	24APR96	24APR96
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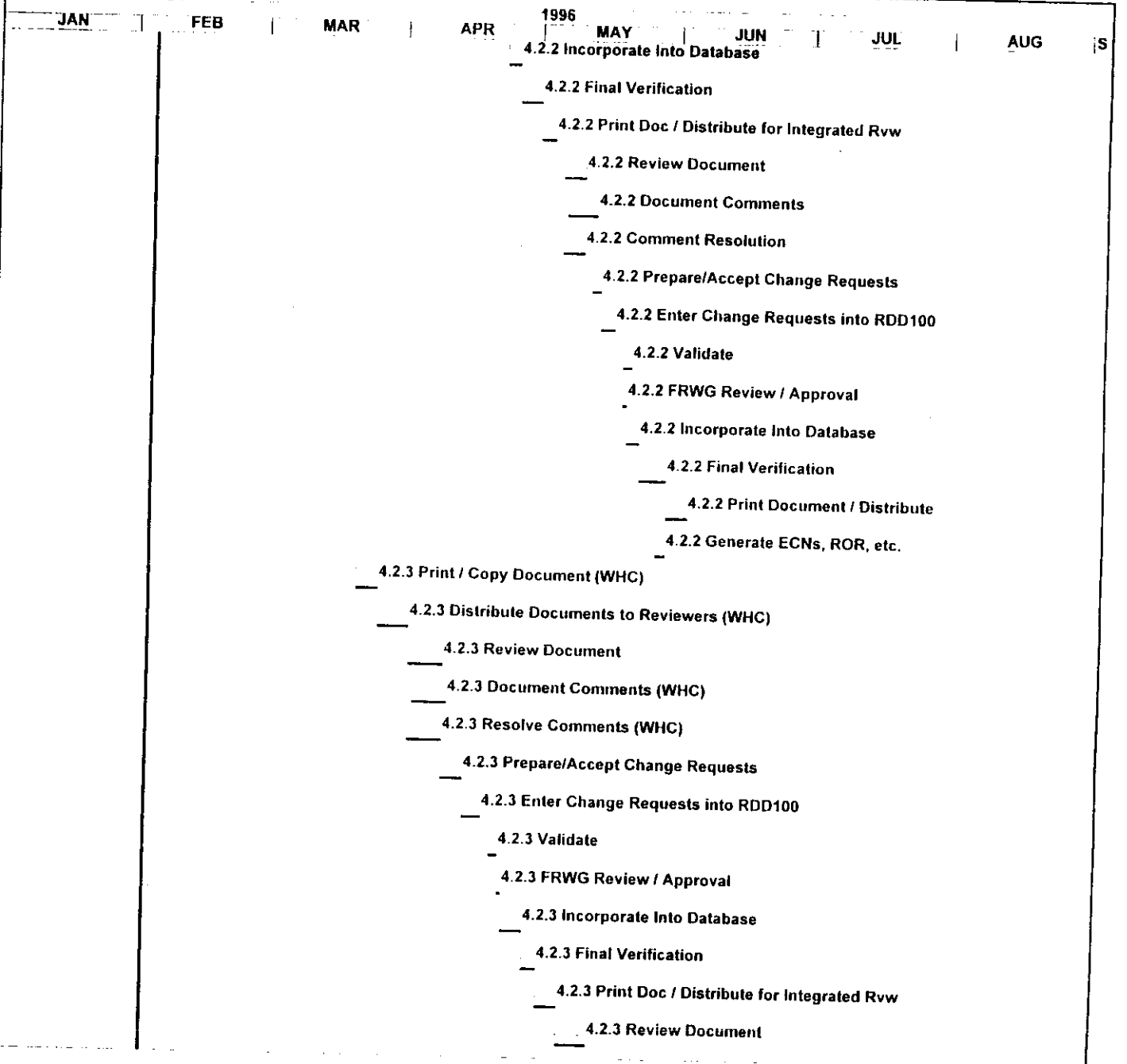
FR 176	30APR96	02MAY96
FR 177	03MAY96	07MAY96
FR 179	08MAY96	14MAY96



Sheet 5 of 7

Activity ID	Early start	Early finish
FR 180	09MAY96	15MAY96
FR 181	08MAY96	14MAY96
FR 183	15MAY96	16MAY96
FR 184	17MAY96	21MAY96
FR 185	22MAY96	23MAY96
FR 186	22MAY96	22MAY96
FR 187	23MAY96	28MAY96
FR 188	29MAY96	31MAY96
FR 189	03JUN96	05JUN96
FR 190	30MAY96	31MAY96
FR 194	22MAR96	26MAR96
FR 195	27MAR96	02APR96
FR 196	03APR96	10APR96
FR 197	04APR96	11APR96
FR 198	03APR96	10APR96
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FR 201	16APR96	19APR96
FR 202	22APR96	23APR96
FR 203	24APR96	24APR96
FR 204	25APR96	29APR96
FR 205	30APR96	02MAY96
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FR 208	08MAY96	14MAY96
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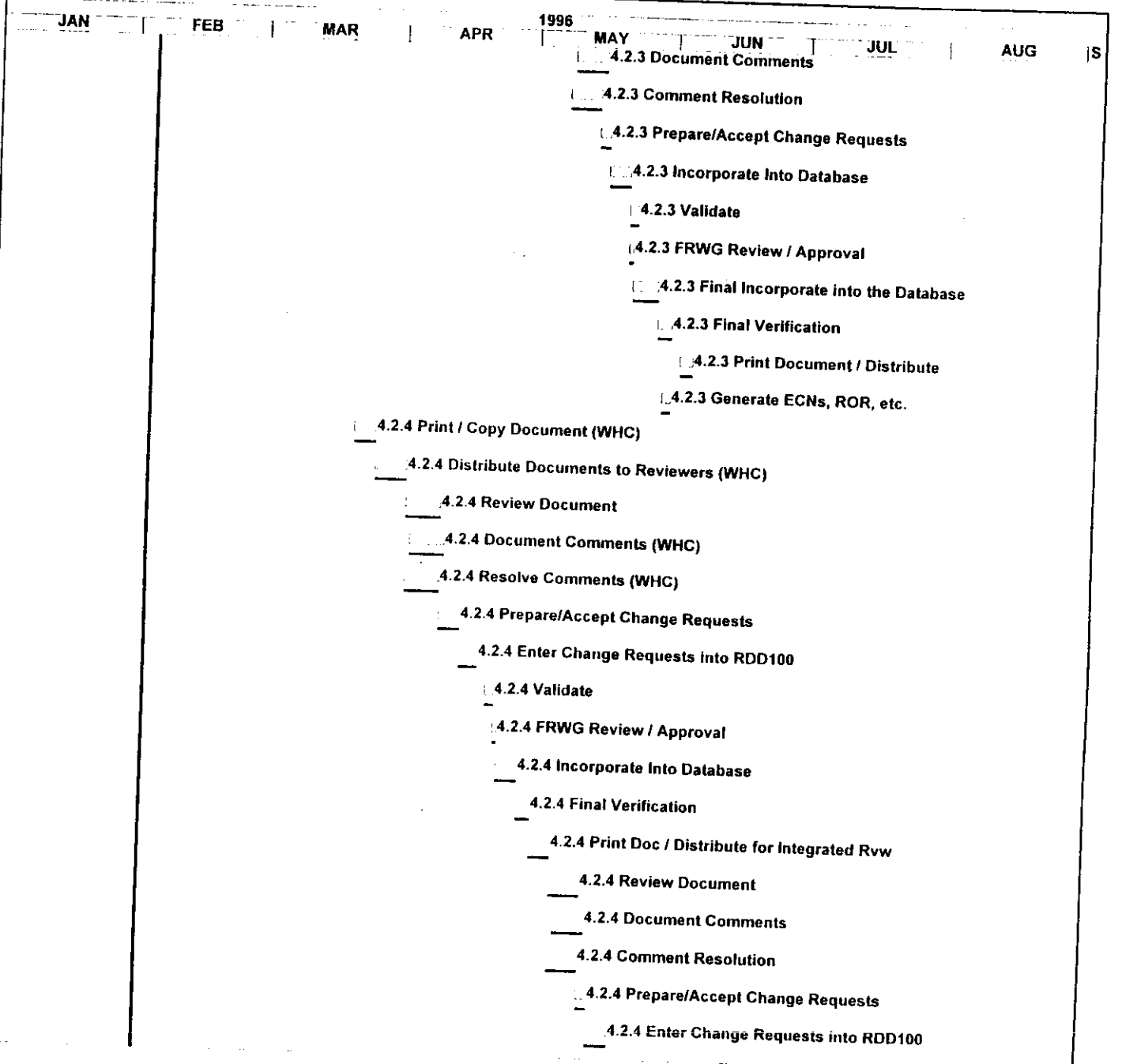
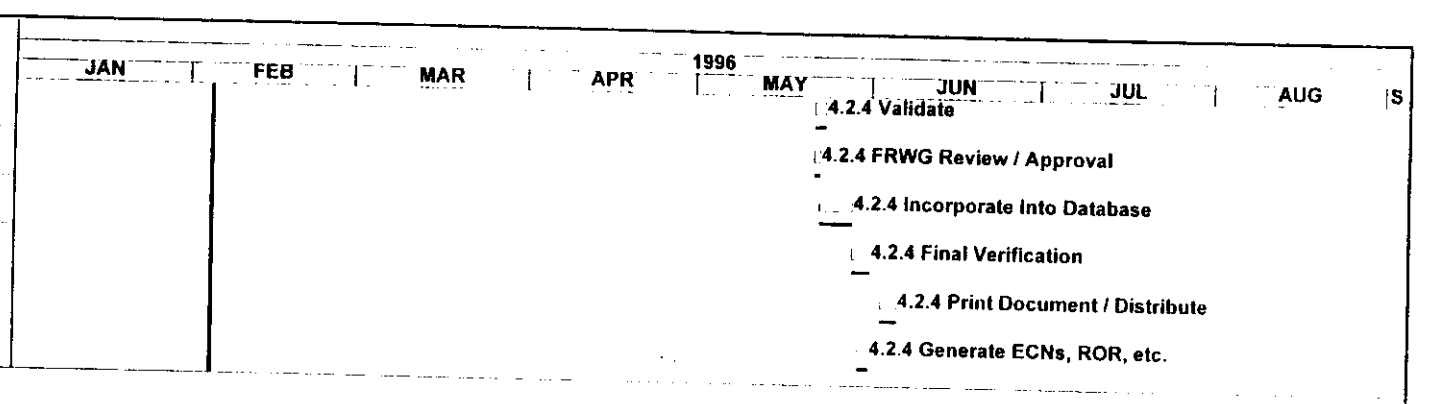
FR 213	17MAY96	21MAY96



Sheet 6 of 7

Activity ID	Early start	Early finish
FR 214	22MAY96	23MAY96
FR 215	22MAY96	22MAY96
FR 216	23MAY96	28MAY96
FR 217	29MAY96	31MAY96
FR 218	03JUN96	05JUN96
FR 219	30MAY96	31MAY96



Sheet 7 of 7

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	TWRS Technical Integration	Date 02/21/96
Project Title/Work Order		EDT No. 614706
WHC-SD-WM-ETP-188 Rev. 0		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
J. D. Thomson	H6-35	X			
L. G. Peck	H6-35	X			
N. G. Awadall	H6-35	X			
C. W. Dunbar	H6-35	X			
T. L. Moore	H6-11 ~~R2-76~~	X			
C. C. Scaief	S2-02	X			
D. B. Smet	N1-46	X			
J. L. Homan	H5-09	X			
R. K. Brown	H5-68	X			
Central Files	A3-88	X			