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ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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Reason	Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN	(J) Name	(K) Signature	(L) Date	(M) MSIN	Reason	Disp.
1	1	Cog. Engr. M. D. VanderZanden	8/22/94	52-24		J. R. Kriskovich				52-24	3
1	1	Cog. Mgr. W. W. Jenkins	W. W. Jenkins	8/22/94		D. J. Minteer				52-24	3
		QA		52-24		R. S. Popielarczyk				51-30	3
		Safety				J. L. Homan				52-09	1
1		S. D. Riesenweber	S. D. Riesenweber	9/6/94		M. A. Smith-Fewell				52-09	1
1		J. D. Thomson	J. D. Thomson	9/8/94		Central Files (2)				52-04	
				52-76		O.S.T.I. (2)				52-07	
18. <i>M. D. VanderZanden</i> M. D. VanderZanden Signature of EDT Originator		19. <i>W. W. Jenkins</i> W. W. Jenkins Authorized Representative Date for Receiving Organization		20. <i>J. D. Thomson</i> J. D. Thomson Cognizant/Project Engineer's Manager		21. DOE APPROVAL (if required) Ltr. No. <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/comments <input type="checkbox"/> Disapproved w/comments					
Date 8/22/94		Date 8/22/94		Date							

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RELEASE AUTHORIZATION

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STRATEGY DOCUMENT PREPARATION AND MAINTENANCE

Release Date: 9/19/94

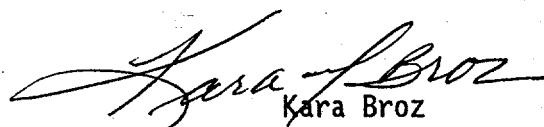
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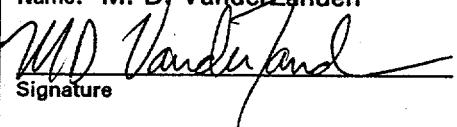


Kara Broz

(Signature)

9/19/94

(Date)

SUPPORTING DOCUMENT		1. Total Pages 8
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APPROVED FOR PUBLIC RELEASE <i>Kms 9/19/94</i>		
7. Abstract The Engineering Task Plan outlines the scope tasks, responsible individuals and organization, and schedule for	8. PURPOSE AND USE OF DOCUMENT - This document was prepared for use within the U.S. Department of Energy and its contractors. It is to be used only to perform, direct, or integrate work under U.S. Department of Energy contracts. This document is not approved for public release until reviewed. PATENT STATUS - This document copy, since it is transmitted in advance of patent clearance, is made available in confidence solely for use in performance of work under contracts with the U.S. Department of Energy. This document is not to be published nor its contents otherwise disseminated or used for purposes other than specified above before patent approval for such release or use has been secured, upon request, from the Patent Counsel, U.S. Department of Energy Field Office, Richland, WA.	
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ENGINEERING TASK PLAN FOR
TANK FARM VENTILATION STRATEGY DOCUMENT
PREPARATION AND MAINTENANCE

AUGUST 22, 1994

Author

M. D. VanderZanden

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**WORK PLAN FOR
TANK FARM VENTILATION STRATEGY DOCUMENT
PREPARATION AND MAINTENANCE**

1.0 INTRODUCTION

Active and passive systems provide ventilation for single shell tanks (SST), double shell tanks (DST), and doubly contained receiver tanks (DCRT). The systems perform or contribute to one or more of the following functions: maintain structural integrity (prevent overpressurization), confinement, cooling, vapor and gas removal, and leak detection. For certain tanks, ventilation also removes particles, in addition to vapors, to permit visual observation of the tank inner walls and waste surface. The function(s) performed are dependent on tank construction, watchlist classification, and tank contents. The function(s) should be maintained to support the TWRS mission.

The tank farm mission is expected to extend to 2028, based on Tri-Party Agreement (TPA) milestone, M-50-00, for completion of waste pretreatment. Many systems are currently beyond service life expectations and continued operation will result in decreased reliability and increased maintenance. Therefore, the systems must be replaced or upgraded to ensure adequate reliability.

Ventilation system upgrades are included in a capital Project W-314, Tank Farm Restoration and Safe Operations. The ventilation upgrades are expected to be completed by June 2002. The new ventilation systems will satisfy the required function(s) of the tanks and/or tank farms. However, interim component upgrades may be required to guaranty reliability of systems until the capital project is completed. Some upgrades originally identified in the project might more suitably be provided with non-project resources.

An overall strategy for ventilation upgrades is required to ensure integration between Project W-314 and non-project system upgrades, and to assure that a well thought out near and long term total system approach exists. The general approach is to develop technical bases for upgrading ventilation systems. Once the technical bases have been established, the upgrades can be prioritized based on greatest need and activities being performed by other Program Offices. This approach to equipment improvements should eliminate duplication of effort, inadequate or inappropriate upgrading, and inefficient use of budget. In addition, the technical basis approach will ensure systems continue to perform required functions, and provides a defensible basis for all planned ventilation activities under the cognizance of Upgrades Program.

2.0 SCOPE

The Tank Farm Ventilation Strategy Document will be divided into three segments: initial screening, component upgrades, and W-314 recommendations. The first segment, initial screening, will be a tank by tank evaluation of the ventilation systems. This will be the basic fact finding portion of the strategy. The information to be gathered will include required life, remaining useful life, life of upgraded system, function the system provides, and identifying future ventilation needs and upgrades for the TWRS Program Office. This information will be gathered by document searches and meetings with appropriate individuals.

For initial screening, the required life, remaining useful life, and required life of upgraded system will be obtained from existing documents. The function of the system will be initially determined by engineering judgement and the bases for the judgements will be documented. Judgements that can be validated by supporting evidence will be referenced.

The second segment of the strategy, component upgrades, will identify components that must be upgraded. These component (interim) upgrades will ensure the existing systems continue to operate until new systems are installed by Project W-314 or non-project resources. An evaluation will be performed to determine which components require replacement.

The starting point of the evaluation will be the remaining life obtained from the initial screening. All components identified to be beyond the useful service life will be assessed to determine the urgency of upgrading. Visual inspections will be used as a screening to determine whether immediate replacement or non-destructive testing is required. Non-destructive testing may be required to determine actual component condition. In addition, an improved basis for equipment life estimates will be developed for more accurate equipment life predictions. The final product of this segment will be a prioritized list of interim component upgrades. The list will be compiled by comparing work in-progress and planned with the upgrade needs. Priority, urgency and risk will be key factors in arranging the list.

The third segment will make recommendations on system requirements and configurations. A review of all applicable DOE Orders, federal regulations, national standards, state regulations, and WHC requirements will be completed. The documents will be reviewed to determine if waivers or some other justification should be issued. The goal of the reviews will be to eliminate requirements that add little or no value to the final product. This will increase the cost effectiveness of the W-314 ventilation upgrades.

Using the required functions from the first segment, a determination will be made on a tank by tank basis whether or not ventilation is required. If ventilation is required, a determination will be made to indicate whether active or passive ventilation systems are required. Recommendations on the configurations of active and passive systems will be based on the regulation and standards review described above. A prioritized list of system upgrades will be provided to ensure the systems in greatest need are upgraded first. Finally, a procurement strategy recommendation will be provided for each system upgrade.

All three segments will be combined and issued as a supporting document. The supporting document will be a living document and will be revised periodically (initially every six months). The revisions will incorporate additional information by coordinating closely with all related on-going TWRS programs.

3.0 ENGINEERING TASKS

The engineering tasks to be performed for the technical strategy for ventilation upgrades includes but is not limited to the following:

- Brief description of ventilation system on all SST, DST, and DCRT tanks
- Review TPA milestones and supporting documents for Project W-314
- Determine completion and life of Projects W-030 and W-314
- Determine remaining useful life of all ventilation systems
- Establish functions provided by ventilation systems and document bases
- Review SAR, OSR, OSD, ISB, and ISEL
- Interface with TWRS Program Office to determine ventilation needs and planned upgrades
- Walkdown and inspect existing ventilation systems and components
- Identify components requiring NDT and NDT methods
- Establish basis for equipment life estimates
- Compile list of prioritized interim component upgrades
- Review applicable DOE Orders, federal regulations, national standards, state regulations, and WHC requirements
- Determine system configurations for active and passive ventilation systems
- Compile prioritized list of system upgrades
- Write justifications or waivers for eliminating unnecessary requirements

4.0 ORGANIZATION RESPONSIBILITIES

Signatures on the Engineering Data Transmittal indicate concurrence with the tasks and schedule by the responsible individual and organizations.

- Perform the engineering tasks outlined in section 3.0 and prepare technical strategy document.

Engineering Manager:
Engineers:

W. W. Jenkins
M. D. VanderZanden (Lead)
J. R. Kriskovich
D. J. Minteer

- Provide funding, review and approve supporting document.

End Function Manager:
Program Manager:

J. D. Thomson
S. D. Riesenweber

- Provide documentation and information relating to Project W-314, additional assistance as requested, and review recommendations.

Engineering Manager:
Engineer:

J. L. Homan
M. A. Smith-Fewell

5.0 SCHEDULE

The schedule for the program plan is attached (Attachment 1).

6.0 COST ESTIMATE

The following Rough Order of Magnitude cost estimate is based on 3 engineers working half man months.

Initial Document:

- 1.5 engineers X 5.5 months X 160 hours/month X \$60/hr ~ \$79,200
- Management/Clerical X 5.5 months X 10 hours/month X \$60/hr ~ \$3,300

Subsequent Document Revisions:

- .5 engineer X 9 months X 160 hours/month X \$60/hr ~ \$43,200
- Management/Clerical X 9 months X 4 hours/month X \$60/hr ~ \$2,200

Total: \$127,900

7.0 QUALITY ASSURANCE

The Tank Farm Ventilation Strategy document has been assigned an Approval Designation of NA in accordance with Reference 1.

8.0 REFERENCE

1.WHC-CM-3-5, Document Control and Records Management Manual, Section 12.7, "Approval of Environmental, Safety, and Quality Affecting Documents"

WHC-SD-WM-ETP-113
Rev. 0

Attachment 1

Ventilation Strategy

No.	Task Name	Duration	Start	End	1995												
					Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1.	Initial Screening	22.00 d	Jul/15/94	Aug/15/94													
2.	Vent System Type	1.00 d	Jul/15/94	Jul/15/94													
3.	ID Key Documents	1.00 d	Jul/15/94	Jul/15/94													
4.	Review Key Documents	1.00 d	Jul/15/94	Jul/15/94													
5.	Required Life	1.00 d	Jul/15/94	Jul/15/94													
6.	Remaining Life	1.00 d	Jul/15/94	Jul/15/94													
7.	Upgraded System Life	1.00 d	Jul/15/94	Jul/15/94													
8.	Establish System Functions	1.00 d	Jul/15/94	Jul/15/94													
9.	Identity System Functions	2.00 d	Jul/15/94	Jul/19/94													
10.	Document Function Bases	10.00 d	Aug/02/94	Aug/15/94													
11.	Program Office Vent Needs	16.00 d	Jul/21/94	Aug/07/94													
12.	Component Upgrades	22.00 d	Aug/18/94	Sep/15/94													
13.	ID Comp. Beyond Life	1.00 d	Aug/18/94	Aug/18/94													
14.	Innovate Eng. life Ext.	16.00 d	Aug/17/94	Sep/03/94													
15.	Walkdown Equipment	15.00 d	Aug/17/94	Sep/07/94													
16.	ID Comp. for NDT	3.00 d	Sep/08/94	Sep/11/94													
17.	Prioritized Upgrades List	3.00 d	Sep/11/94	Sep/11/94													
18.	W-31.4. Recommendations	47.00 d	Sep/18/94	Nov/23/94													
19.	ID Regs and Standards	2.00 d	Sep/18/94	Sep/18/94													
20.	Review Regs & Standards	10.00 d	Sep/17/94	Oct/03/94													
21.	ID Minimum Requirements	10.00 d	Oct/04/94	Oct/11/94													
22.	White Walkover of Regs & Specs	15.00 d	Oct/11/94	Nov/06/94													
23.	Prioritize System Upgrades	3.00 d	Nov/09/94	Nov/14/94													
24.	System Configuration	10.00 d	Nov/09/94	Nov/23/94													
25.	Vent Strategy Document	22.00 d	Nov/26/94	Dec/02/94													
26.	Preparation	10.00 d	Nov/25/94	Dec/02/94													
27.	Review	6.00 d	Dec/02/94	Dec/15/94													
28.	Comments	6.00 d	Dec/15/94	Dec/22/94													
29.	Approved	2.00 d	Dec/23/94	Dec/28/94													
30.	Document Revision #1	131.00 d	Dec/27/94	Jun/30/95													
31.	Gather Information	109.00 d	Dec/27/94	May/31/95													
32.	Preparation	10.00 d	Jun/01/95	Jun/14/95													
33.	Review	6.00 d	Jun/15/95	Jun/21/95													
34.	Comments	6.00 d	Jun/22/95	Jun/28/95													
35.	Approved	2.00 d	Jun/28/95	Jun/30/95													
36.	Document Revision #2	163.00 d	Jul/03/95	Feb/09/96													
37.	Gather Information	131.00 d	Jul/03/95	Jan/09/96													
38.	Preparation	10.00 d	Jan/10/96	Jan/24/96													
39.	Review	6.00 d	Jan/25/96	Jan/31/96													
40.	Comments	6.00 d	Feb/01/96	Feb/07/96													
41.	Approved	2.00 d	Feb/08/96	Feb/09/96													