FEB 16 1995 (21)

ENGINEERING DATA TRANSMITTAL

Page 1 of 1

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No 611301

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3		JT Bresina			T2-10
3		TR Benegas			N1-27
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RELEASE AUTHORIZATION

**Document
Number:**

WHC-SD-WM-WP-296, Rev. 0

**Document
Title:**

Work Plan for the Hydrogen Mitigation Test (HMT)
Rotation Motor Heater System

Release Date:

February 16, 1995

**This document was reviewed following the
procedures described in WHC-CM-3-4 and is:**

APPROVED FOR PUBLIC RELEASE

WHC Information Release Administration Specialist:

Kara M. Broz

February 16, 1995

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WORK PLAN FOR THE HYDROGEN MITIGATION TEST (HMT) ROTATION MOTOR HEATER SYSTEM

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MASTER

**WESTINGHOUSE HANFORD COMPANY
FEBRUARY 1995**

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WHC-SD-WM-WP-296
Rev 0

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ACRONYMS AND ABBREVIATIONS

DACS	Data Acquisition and Control System
HP	Horsepower
vac	Volts Alternating Current
VSD	Variable Speed Drive

**WORK PLAN FOR THE HYDROGEN MITIGATION TEST (HMT)
ROTATION MOTOR HEATER SYSTEM**

1.0 DESCRIPTION

This document is the work plan to design, fabricate, and install a heater system and cover hood for the Hydrogen Mitigation Test (HMT) rotation motor and gearbox. This hardware will be fabricated under Development Control, with facility use potential, as defined in WHC-CM-6-1, Standard Engineering Practices, EP-2,4. The rotation motor assembly, during cold weather conditions, has experienced freezing causing the motor not to operate. The motor type is a 440 vac, 1 HP squirrel cage induction motor, totally enclosed, and mounted vertically. It is driven by a 5 HP VSD controlled from the DACS. The software program controlling the motor applies a minimum torque to the motor. Therefore, if any resistance from ice or frost is encountered the motor will not turn.

A strip heater system shall be designed to keep the gearbox assembly above 50 degrees F. Additionally, a light gauge sheet metal hood shall be designed to cover the motor and gear box assembly from the weather. The heater system shall be mounted to the gearbox and controlled via a thermostatically cycled power supply on a maintained circuit. It shall have a thermocouple to supply the feedback signal to the self-contained controller. The system shall be self-contained and require low maintenance. The design shall allow for manual starting of the system. Furthermore, loss of power or over temperature shall open the electrical power and cause a manual re-start of the system. The control box shall be locally mounted and be environmentally protected. Furthermore, the functionality of the system shall feature a POWER ON, STOP, HEATER POWER-ON, and HEATERS-ON switches and lights located on the front cover.

2.0 RESTRICTIONS AND/OR SPECIAL CONDITIONS

None.

3.0 WORK ORDER NUMBER

This hardware is being fabricated under Internal Work Order E40536 to Fabrication Services, Organization Number 52100. The Charge Code N2B41 is issued by Mitigation Equipment, Organization #71110.

4.0 INSPECTION CRITERIA

No special inspections are required. However, the normal fabrication inspection will be performed by the shop foreman.

5.0 MATERIAL REQUIREMENTS

All material shall be supplied by Mitigation Equipment except for those materials noted on the drawings. These drawings shall be submitted to Fabrication Services with the materials when the job is submitted for fabrication. Reference APPENDIX for a list of the drawings.

6.0 SPECIAL TESTING REQUIREMENTS

Basic electrical tests shall be performed by the fabricator. Additionally, a functional test shall be performed under the direction of the cognizant engineer.

7.0 SAFETY CLASS DESIGNATION

The safety class designation is a 4 (four) in accordance with WHC-CM-4-46.

8.0 APPROVAL DESIGNATOR

The approval designator is Q in accordance with WHC-CM-3-5, Section 12.7.

9.0 SHIPPING AND HANDLING INSTRUCTIONS

No special shipping and handling instructions are required. Upon completion of the work the shipping details will be specified by the cognizant engineer.

10. DELIVERY DATE

All fabrication and testing shall be completed by March 23, 1995.

[illegible]

[illegible]

1 INSULATED HOOD ASSEMBLY

U.S. DEPARTMENT OF AGRICULTURE BUREAU OF PLANT INDUSTRY WASHINGTON, D.C. 20250		4447 PLUM ROTATION SYS INSULATED HOOD ASSEMBLY		F 141-158 H-14-00168-0	
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APPENDIX

WELDING	WELDING	WELDING
WELDING	WELDING	WELDING
A	1/2" X 4"	1/2"
B	3/4" X 1/2"	3/4"
C	3/4" X 1/2"	3/4"
D	1/2" X 2"	1/2"
E	1/2" X 2"	1/2"
F	1/2" X 2"	1/2"
G	3/4" X 1/2"	3/4"
H	3/4" X 1/2"	3/4"
I	3/4" X 1/2"	3/4"
J	3/4" X 1/2"	3/4"

20 NAMEPLATE

FOR GENERAL NOTES AND PARTS LIST, SEE SHEET 1

CUTOUT DETAIL B
SCALE: NONE

CUTOUT DETAIL C
SCALE: NONE

CUTOUT DETAIL D
SCALE: 1/2"

U.S. DEPARTMENT OF ENERGY	
NATURAL GAS	
TANK S-10111	
HMT-10111	
ASSEMBLY DETAILS	
FIGURE 1	FIGURE 2
FIGURE 3	FIGURE 4
FIGURE 5	FIGURE 6
FIGURE 7	FIGURE 8
FIGURE 9	FIGURE 10
FIGURE 11	FIGURE 12
FIGURE 13	FIGURE 14
FIGURE 15	FIGURE 16
FIGURE 17	FIGURE 18
FIGURE 19	FIGURE 20
FIGURE 21	FIGURE 22
FIGURE 23	FIGURE 24
FIGURE 25	FIGURE 26
FIGURE 27	FIGURE 28
FIGURE 29	FIGURE 30
FIGURE 31	FIGURE 32
FIGURE 33	FIGURE 34
FIGURE 35	FIGURE 36
FIGURE 37	FIGURE 38
FIGURE 39	FIGURE 40
FIGURE 41	FIGURE 42
FIGURE 43	FIGURE 44
FIGURE 45	FIGURE 46
FIGURE 47	FIGURE 48
FIGURE 49	FIGURE 50
FIGURE 51	FIGURE 52
FIGURE 53	FIGURE 54
FIGURE 55	FIGURE 56
FIGURE 57	FIGURE 58
FIGURE 59	FIGURE 60
FIGURE 61	FIGURE 62
FIGURE 63	FIGURE 64
FIGURE 65	FIGURE 66
FIGURE 67	FIGURE 68
FIGURE 69	FIGURE 70
FIGURE 71	FIGURE 72
FIGURE 73	FIGURE 74
FIGURE 75	FIGURE 76
FIGURE 77	FIGURE 78
FIGURE 79	FIGURE 80
FIGURE 81	FIGURE 82
FIGURE 83	FIGURE 84
FIGURE 85	FIGURE 86
FIGURE 87	FIGURE 88
FIGURE 89	FIGURE 90
FIGURE 91	FIGURE 92
FIGURE 93	FIGURE 94
FIGURE 95	FIGURE 96
FIGURE 97	FIGURE 98
FIGURE 99	FIGURE 100

APPENDIX