

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606
	Revision*: 15
	Page: 1 of 26

INTEC	Technical Procedure	For Additional Info: http://EDMS	Effective Date: 09/13/12
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Manual: INTEC FSV3

USE TYPE 1Change Number: 337191

*The current revision can be verified on EDMS.

1. INTRODUCTION

1.1 Purpose

Perform visual inspection and operational test of the two Fort St. Vrain (FSV) Independent Spent Fuel Storage Installation (ISFSI) Charge Face Isolation Valves (IVs) used at the charge face structure and the cask load/unload port (CLUP).

Perform visual inspection of the two FSV ISFSI shield plug handling devices (SPHDs). SPHD 1 is used for handling shield plugs and SPHD 2 is used for handling depleted uranium plugs at the FSV ISFSI.

1.2 Scope and Applicability

This procedure specifies the actions necessary to perform visual inspections and operational tests of the IVs to determine if obvious deficiencies have occurred and is to be performed annually during use.

The visual inspection and operational test are also performed following an “Off-Normal” event involving the IVs as described in the “Safety Analysis Report for the Fort St. Vrain Independent Spent Fuel Storage Installation (SAR).”

This procedure specifies the actions necessary to perform visual inspections of SPHD 1 and SPHD 2 to determine if obvious deficiencies have occurred and is to be performed annually during STORAGE or OPERATIONS.

Visual inspection is also performed following an “Off-Normal” event involving the SPHDs as described in the SAR.

2. PRECAUTIONS AND LIMITATIONS

- 2.1 Any potential deficiencies, hazard, or abnormal condition noted during the performance of this procedure must be entered in Appendix A, and reported verbally to the FSV ISFSI Manager.
- 2.2 Personnel must follow the applicable hazard mitigations detailed in Appendix C, “Procedure Hazard Analysis.”
- 2.3 When using this procedure to move components without handling fuel, steps may be marked “Not Applicable (N/A),” and minimum personnel requirements and required materials and equipment may be adjusted as appropriate for the evolution. All applicable Precautions and Limitations must be observed when

**INSPECTION OF FSV ISFSI ISOLATION VALVES AND
SHIELD PLUG HANDLING DEVICES**

Identifier: TPR-5606

Revision*: 15

Page: 2 of 26

handling individual components (such as, Container Handling Machine or isolation valves).

3. PREREQUISITES**3.1 Planning and Coordination**

- _____ 3.1.1 FSO: Ensure Certified Fuel Handlers (CFHs) are available to perform this procedure (3 for IV movement, 2 otherwise).
- _____ 3.1.2 FSO: Conduct a pre-job briefing (use Forms 434.14, “Pre-Job Briefing Checklist,” and Form 434.15, “Pre-Job Briefing Attendance Record,” (if needed) with the operations personnel and complete the following items:
- A. A discussion of safety precautions and emergency action associated with the conduct of this procedure
 - B. A review of Step 4 of this procedure
 - C. Ensure that the training and qualification of personnel is current
 - D. RCT/RCM coverage has been assigned to provide radiological control surveillance when required during the performance of this procedure.
- _____ 3.1.3 FSO: Ensure this procedure is the most current revision.
- _____ 3.1.4 Heat or cold stress monitoring must be performed per MCP-2704, “Heat and Cold Stress.”
- _____ 3.1.5 CFH: Ensure Shell grease APL 701 (or equivalent) is available.
- _____ 3.1.6 Ensure powderless latex or nitrile gloves are available for work with this procedure.
- _____ 3.1.7 Ensure inspection tags for fall protection harness, fall arrest device, and connector strap are current.
- _____ 3.1.8 Ensure inspections for the MVDS Crane and Slings No. 2 and 3 are current.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 3 of 26
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3.2 Performance Documents

3.2.1 The following forms are available:

- A. Form 434.14, “Pre-Job Briefing Checklist”
- B. Form 434.15, “Pre-Job Briefing Attendance Record,” (if used)
- C. Form 433.24, “Task Evolution Feedback Form,” (if used)
- D. Form 441.49, “ICP Radiation Work Permit,” (if used).

3.3 Training

3.3.1 Ensure the training requirements of Appendix C are met.

3.4 Field Preparations

3.4.1 SPHD lifting is limited by the length of the lifting sling, therefore the IV to be tested must be placed directly on the cask load/unload port (CLUP) or charge face to allow positioning the SPHD on the IV.

3.4.2 CFH: Process radiation work permit, if necessary.

3.4.3 CFH: Ensure the following material and equipment is on hand, as needed.

Material and Equipment List		
Item Description	Remarks	Quantity
Torque wrench capable of torquing to 200 ft lbs Upper range of torque wrench _____	S/N _____ Calibration Due Date _____	1
2 3/8-in. socket (3/4-in. drive)		
1 1/8-in. wrench (socket or combination)		
1 1/2-in. wrenches (socket or combination) (2)		
Breaker bar		
Leather gloves		
Substantial footwear		
Nitrile or powderless latex gloves		
Molykote lubricant or equivalent		

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 4 of 26
--	--

Material and Equipment List		
Item Description	Remarks	Quantity
MVDS Crane	Inspection due date _____	
Sling No. 2	Inspection due date _____	
Sling No. 3	Inspection due date _____	
Fall protection equipment	Inspection due date _____	

3.5 Approvals and Notifications

3.5.1 FSV ISFSI Manager: Verify prerequisites completed.

FSV ISFSI Manager: _____
Signature Date

3.5.1.1 Log the inspection procedure in the FSV Daily Operations Log and release it to commence work.

4. INSTRUCTIONS

NOTE: *Unless designated in front of step, a Certified Fuel Handler (CFH) is person performing steps.*

4.1 IF NOT already complete,
THEN Install an IV at the CLUP.

Init/Date

- _____ 4.1.1 Check which IV was installed at the CLUP: _____ IV 1 _____ IV 2.
- _____ 4.1.2 Install the lifting eye bolts with links to the isolation valve.
- _____ 4.1.3 IF NOT previously performed,
THEN connect Sling No. 3 to the crane hook.
- _____ 4.1.4 Connect Sling No. 3 to the IV lifting eye bolt links.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 5 of 26
--	--

- _____ 4.1.5 Two CFH: IF necessary, THEN remove the bolts from the isolation valve as follows:
- 4.1.5.1 First CFH (Performer): Remove the bolts from the isolation valve.
- _____ Signature _____ Date
- 4.1.5.2 Second CFH: Verify (independent) the bolts have been removed from the isolation valve.
- _____ Signature _____ Date

CAUTION

The tag lines prevent the isolation valve from rotating during the lift. Excessive rotating may cause the sling to unwind allowing the isolation valve to come to rest on the floor damaging the valve.

NOTE: *Steps 4.1.6 through 4.1.8 may be performed in parallel with Steps 4.1.5 and 4.1.9.*

- _____ 4.1.6 Attach two tag lines to the isolation valve to prevent rotation.
- _____ 4.1.7 Install the two location bolts per the IV positioning and bolting pattern in Appendix B.
- 4.1.7.1 Remove dust caps from bolt locations.
- _____ 4.1.8 Establish fall protection (either guardrail with midrail and toe board or Safety Monitor) in area except in area isolation valve is to be transferred through.
- _____ 4.1.9 Remove CLUP cover plate.
- _____ 4.1.10 Position the isolation valve at the CLUP adapter plate ensuring correct alignment on location bolts per Appendix B.
- _____ 4.1.11 Remove fall protection.

<p>INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES</p>	<p>Identifier: TPR-5606 Revision*: 15 Page: 6 of 26</p>
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- _____ 4.1.12 Disconnect Sling No. 3 from eye bolts and store as directed.
- _____ 4.1.13 Remove eye bolts and tag lines and store as directed.
- _____ 4.1.14 Install the bolts on isolation valve.
- _____ 4.1.15 Two CFH: Torque the IV bolts.
 - 4.1.15.1 First CFH (Performer): Torque the IV bolts to 200 ft lbs per the bolting pattern in Appendix B.

Signature Date

- 4.1.15.2 Second CFH: Verify (witness) IV bolts have been torqued to 200 ft lbs per the bolting pattern in Appendix B.

Signature Date

4.2 Perform visual inspection of IV.

- 4.2.1 Perform visual inspection of IV to determine if obvious deficiencies have occurred such as corrosion, deformation or cracks, loose bolts or loss of bolts/fittings.

- 4.2.1.1 Record inspection results below:

- 4.2.1.2 Report any obvious deficiencies found to the appropriate engineering support personnel for disposition and resolution.

- 4.2.1.3 Appropriate engineering support personnel: IF deficiencies are detected, THEN generate necessary deficiency recording documents and work performance documents to track and correct any deficiencies.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 7 of 26
--	--

4.3 IF NOT already complete,
THEN Install the IV that was NOT placed at the CLUP in step 4.1, at the charge face.

Init/Date

_____ 4.3.1 Check which IV was installed at the charge face: _____ IV 1 _____ IV 2.

_____ 4.3.2 Install the lifting eye bolts with links to the isolation valve.

_____ 4.3.3 IF NOT previously performed,
THEN connect Sling No. 3 to the crane hook.

_____ 4.3.4 Connect Sling No. 3 to the IV lifting eye bolt links.

_____ 4.3.5 Two CFH: IF necessary,
THEN remove the bolts from the isolation valve as follows:

4.3.5.1 First CFH (Performer): Remove the bolts from the isolation valve.

_____ Signature _____ Date

4.3.5.2 Second CFH: Verify (independent) the bolts have been removed from the isolation valve.

_____ Signature _____ Date

CAUTION

The tag lines prevent the isolation valve from rotating during the lift. Excessive rotating may cause the sling to unwind allowing the isolation valve to come to rest on the floor damaging the valve.

NOTE: *Step 4.3.6 may be performed in parallel with Steps 4.3.5 and 4.3.7.*

_____ 4.3.6 Attach two tag lines to the isolation valve to prevent rotation.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 8 of 26
--	--

_____ 4.3.7 Install the two location bolts per the IV positioning and bolting pattern in Appendix B.

4.3.7.1 Remove dust caps from bolt locations.

_____ 4.3.8 Position the isolation valve at the charge face ensuring correct alignment on location bolts per Appendix B.

_____ 4.3.9 Disconnect Sling No. 3 from eye bolts and store as directed.

_____ 4.3.10 Remove eye bolts and tag lines and store as directed.

_____ 4.3.11 Install the bolts on isolation valve.

_____ 4.3.12 Two CFH: Torque the IV bolts.

4.3.12.1 First CFH (Performer): Torque the IV bolts to 200 ft lbs per the bolting pattern in Appendix B.

_____ Signature _____ Date

4.3.12.2 Second CFH: Verify (witness) IV bolts have been torqued to 200 ft lbs per the bolting pattern in Appendix B.

_____ Signature _____ Date

4.4 Perform visual inspection of IV.

4.4.1 Perform visual inspection of IV to determine if obvious deficiencies have occurred such as corrosion, deformation or cracks, loose bolts or loss of bolts or fittings.

4.4.1.1 Record inspection results below:

**INSPECTION OF FSV ISFSI ISOLATION VALVES AND
SHIELD PLUG HANDLING DEVICES**

Identifier: TPR-5606

Revision*: 15

Page: 9 of 26

- 4.4.1.2 Report any obvious deficiencies found to the appropriate engineering support personnel for disposition and resolution.
- 4.4.1.3 Appropriate engineering support personnel: IF deficiencies are detected, THEN generate necessary deficiency recording documents and work performance documents to track and correct any deficiencies.
- 4.5 Inspect SPHD 1.
- _____ 4.5.1 Perform a visual inspection of SPHD 1 and determine if obvious deficiencies have occurred such as corrosion; deformation or cracks, (particular attention is to be given to load path items such as eyebolt, shackle, lifting bar, detent pin, and body fabrication); or loose bolts or loss of bolts/fitting.

WARNING**Working under SPHD 1 if suspended by the MVDS Crane could result in injury to personnel.**

- _____ 4.5.2 Ensure that SPHD 1 has been placed on its storage stand for inspection using fall protection equipment and Sling No. 2 as necessary.
- _____ 4.5.3 Examine the Omnitrack units for freedom of movement and lubrication.
- _____ 4.5.4 Wearing powderless latex or nitrile gloves, lubricate the Omnitrack units as necessary.
- _____ 4.5.5 Connect sling No. 2 to the crane hook.
- _____ 4.5.6 Connect fall arrest device to crane hook using connector strap as needed.
- _____ 4.5.7 Traverse Sling No. 2 and fall arrest device to align with SPHD 1.
- _____ 4.5.8 Don fall protection equipment.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 10 of 26
--	---

WARNING

Moving the crane when personnel are attached to the fall arrest device on the crane hook could result in personnel injury.

- _____ 4.5.9 Do NOT move the crane when personnel are attached to the fall arrest device on the crane hook.
- _____ 4.5.10 Connect fall arrest device to fall protection equipment.
- _____ 4.5.11 Connect Sling No. 2 to SPHD 1.
- _____ 4.5.12 Disconnect fall arrest device from fall protection equipment.
- _____ 4.5.13 Doff fall protection equipment.
- _____ 4.5.14 Raise the lifting shaft to relieve pressure on the pin.
 - 4.5.14.1 Remove the pin.
- _____ 4.5.15 Examine the lifting shaft and ball detent for freedom of movement and lubrication.
- _____ 4.5.16 Wearing powderless latex or nitrile gloves, lubricate the lifting shaft and ball detent as needed.
- _____ 4.5.17 Insert the pin into the lifting shaft.
- _____ 4.5.18 Record inspection results below:
 - _____
 - _____
 - _____
 - _____
 - _____
 - _____
 - _____
- _____ 4.5.19 Report any potential deficiencies to the appropriate engineering support personnel.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 11 of 26
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_____ 4.5.20 Appropriate engineering support personnel: IF deficiencies are detected, THEN generate necessary deficiency recording documents and work performance documents to track and correct any deficiencies.

4.6 Perform operational test of IV 1.

Init/Date

_____ 4.6.1 Ensure IV 1 will NOT hand crank open more than one complete turn of the handwheel.

_____ 4.6.2 Set SPHD 1 on IV 1.

_____ 4.6.3 Hand crank IV 1 fully open.

_____ 4.6.4 Lower SPHD 1 lifting rod into IV 1 to verify IV 1 is open.

_____ 4.6.5 Raise SPHD 1 lifting rod.

_____ 4.6.6 Hand crank IV 1 fully closed.

_____ 4.6.7 Remove SPHD 1.

4.6.8 Ensure IV 1 will NOT hand crank open more than one complete turn of the handwheel.

WARNING

Moving the crane when personnel are attached to the fall arrest device on the crane hook could result in personnel injury.

_____ 4.6.9 Do NOT move the crane when personnel are attached to the fall arrest device on the crane hook.

_____ 4.6.10 Using fall protection equipment, remove SPHD 1 from Sling No. 2 at its parked position.

4.7 Inspect SPHD 2.

Init/Date

_____ 4.7.1 Perform inspection of SPHD 2 and determine if obvious deficiencies have occurred such as corrosion; deformation or cracks, (particular attention is to be given to load path items such as eyebolt, shackle, lifting bar, detent pin and body fabrication); or loose bolts or loss of bolts/fitting.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 12 of 26
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WARNING

Working under SPHD 2 if suspended by the MVDS Crane could result in injury to personnel.

- _____ 4.7.2 Ensure that SPHD 2 has been placed on its storage stand for inspection using Sling No. 2 as necessary.
- _____ 4.7.3 Examine the Omnitrack units for freedom of movement and lubrication.
- _____ 4.7.4 Wearing powderless latex or nitrile gloves, lubricate the Omnitrack units as necessary.
- _____ 4.7.5 Connect Sling No. 2 to SPHD 2.
- _____ 4.7.6 Raise the lifting shaft to relieve pressure on the pin.
- _____ 4.7.7 Examine the lifting shaft and ball detent for freedom of movement and lubrication.
- _____ 4.7.8 Wearing powderless latex or nitrile gloves, lubricate the lifting shaft and ball detent as needed.
- _____ 4.7.9 Insert the pin into the lifting shaft.
- _____ 4.7.10 Record inspection results below:

- _____ 4.7.11 Report any potential deficiencies to the appropriate engineering support personnel.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 13 of 26
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_____ 4.7.12 Appropriate engineering support personnel: IF deficiencies are detected, THEN generate necessary deficiency recording documents and work performance documents to track and correct any deficiencies.

4.8 Perform operational test of IV 2.

Init/Date

_____ 4.8.1 Ensure IV 2 will NOT hand crank open more than one complete turn of the handwheel.

_____ 4.8.2 Set SPHD 2 on IV 2.

_____ 4.8.3 Hand crank IV 2 fully open.

_____ 4.8.4 Lower SPHD 2 lifting rod into IV 2 to verify IV 2 is open.

_____ 4.8.5 Raise SPHD 2 lifting rod.

_____ 4.8.6 Hand crank IV 2 fully closed.

_____ 4.8.7 Remove SPHD 2.

_____ 4.8.8 Ensure IV 2 will NOT hand crank open more than one complete turn of the handwheel.

_____ 4.8.9 Remove Sling No. 2 from SPHD 2 at its parked position.

_____ 4.8.10 Remove Sling No. 2 and fall protection equipment (if not already removed) from the crane hook as directed by supervision.

4.9 IF necessary, THEN remove the isolation valve from the CLUP.

Init/Date

_____ 4.9.1 IF NOT previously performed, THEN connect Sling No. 3 to the crane hook.

_____ 4.9.2 Install the isolation valve eye bolts with links to the isolation valve.

_____ 4.9.3 Connect Sling No. 3 to links.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 14 of 26
--	---

_____ 4.9.4 Two CFH: Unbolt the isolation valve from the CLUP.

4.9.4.1 First CFH (Performer): Unbolt the isolation valve from the CLUP.

Signature

Date

4.9.4.2 Second CFH: Verify (independent) the isolation valve bolts have been removed.

Signature

Date

NOTE: *Steps 4.9.6 through 4.9.8 may be performed in parallel with Step 4.9.5.*

_____ 4.9.5 Traverse the IV to IV laydown area.

_____ 4.9.6 Establish fall protection (either guardrail with midrail and toe board or Safety Monitor) in area except in area isolation valve is to be transferred through.

_____ 4.9.7 Install CLUP cover plate.

_____ 4.9.8 Remove fall protection.

_____ 4.9.9 Lower the IV.

_____ 4.9.10 Disconnect Sling No. 3.

_____ 4.9.11 Remove the IV eyebolts with links.

NOTE: *Step 4.9.14 may be worked concurrently with Steps 4.9.12 and 4.9.13.*

_____ 4.9.12 Traverse Sling No. 3 to the sling laydown area if necessary.

_____ 4.9.13 Disconnect Sling No. 3 from the crane hook if necessary.

_____ 4.9.14 Install the dust covers for the bolt holes and shield plug lifting hole.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 15 of 26
--	---

4.10 IF necessary,
THEN remove the isolation valve from the charge face.

Init/Date

- _____ 4.10.1 IF NOT previously performed,
THEN connect Sling No. 3 to the crane hook.
- _____ 4.10.2 Install the isolation valve eye bolts with links to the isolation valve.
- _____ 4.10.3 Connect Sling No. 3 to links.
- _____ 4.10.4 Two CFH: Unbolt the isolation valve from the charge face.
 - 4.10.4.1 First CFH (Performer): Unbolt the isolation valve from the charge face.

_____ Signature _____ Date

4.10.4.2 Second CFH: Verify (independent) the isolation valve bolts have been removed.

_____ Signature _____ Date

- _____ 4.10.5 Traverse the IV to IV laydown area.
 - _____ 4.10.6 Lower the IV.
 - _____ 4.10.7 Disconnect Sling No. 3.
 - _____ 4.10.8 Remove the IV eyebolts with links.
- NOTE:** *Step 4.10.11 may be worked concurrently with Steps 4.10.9 and 4.10.10.*
- _____ 4.10.9 Traverse Sling No. 3 to the sling laydown area if necessary.
 - _____ 4.10.10 Disconnect Sling No. 3 from the crane hook if necessary.
 - _____ 4.10.11 Install the dust covers for the bolt holes and shield plug lifting hole.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 16 of 26
--	---

4.11 Secure the crane.

Init/Date

- _____ 4.11.1 Traverse the crane as necessary to place the crane in standby.
- _____ 4.11.2 Secure power at the crane pendant.
 - 4.11.2.1 Ensure the tornado clamps have engaged by observing that the lamps on the crane pendant illuminate.
- _____ 4.11.3 Remove Key No. 1 from crane pendant control.

4.12 Perform post-performance activities.

4.12.1 Facility Safety Officer: Do the following:

- 4.12.1.1 Review the results of the inspection maintenance.
- 4.12.1.2 Using input from appropriate engineering support personnel, verify that the necessary deficiency recording documents and work performance documents to track and correct any deficiencies have been generated.
- 4.12.1.3 Request all personnel signing or initialing steps in the procedure to complete the information in the table below:

Printed Name	S Number	Job Function	Initials	Signature

Facility Safety Officer: _____
Signature Date

4.12.2 FSV ISFSI Manager: Do the following:

- 4.12.2.1 Verify procedure is completed.

FSV ISFSI Manager: _____
Signature Date

**INSPECTION OF FSV ISFSI ISOLATION VALVES AND
SHIELD PLUG HANDLING DEVICES**

Identifier: TPR-5606

Revision*: 15

Page: 17 of 26

4.12.2.2 Document completion of procedure on FSV Daily
Operations Log.

5. RECORDS

Completed copy of this procedure

NOTE: [MCP-557, "Records Management,"](#) the [INL Records Schedule Matrix](#), and associated [record types list\(s\)](#) provide current information on the storage, turnover, and retention requirements for these records.

6. REFERENCES

GEC Dwg. No. 362 A 0022, "Charge Face Isolation Valve"

GEC Dwg. No. 362 F 0214, "Charge Face Isolation Valve Seismic Restraint"

GEC Alsthom Engineering Systems LTD Technical Specification 362 F 0152 – "Fort St. Vrain Maintenance, Inspection, and Monitoring Requirements"

"Safety Analysis Report for the Fort St. Vrain Independent Spent Fuel Storage Installation"

GEC Dwg. No. 362 A 0132, "Shield Plug Handling Device Assembly (1)"

GEC Dwg. No. 362 A 0133, "Uranium Shield Plug Handling Device Assembly (2)"

7. APPENDIX

Appendix A, Procedure Discrepancies

Appendix B, IV Positioning and Bolting Pattern

Appendix C, Procedure Hazard Analysis

Appendix D, Procedure Basis

APPENDIX B

IV Positioning and Bolting Pattern

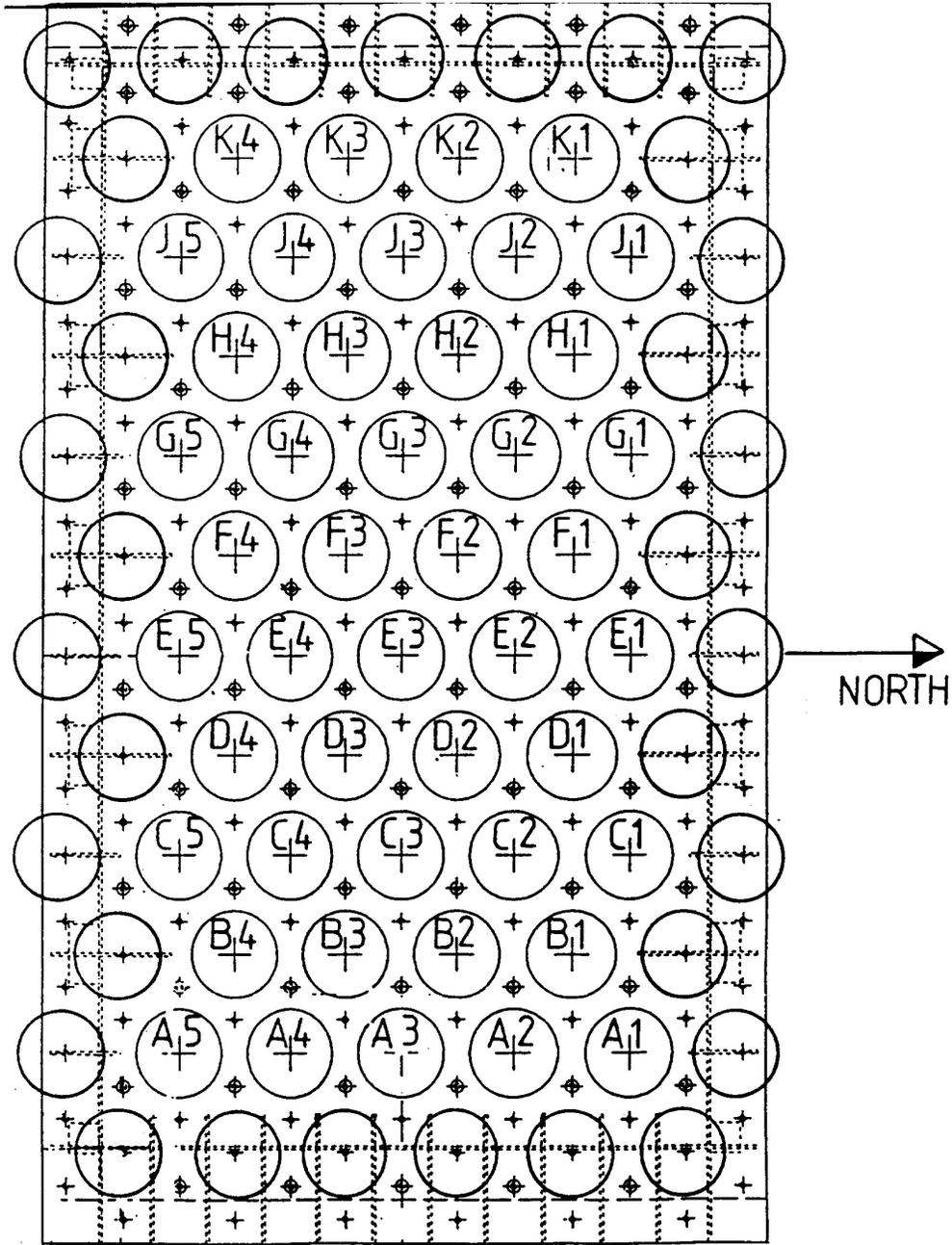


FIG 1 VM STORAGE LOCATIONS

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES

Identifier: TPR-5606
 Revision*: 15
 Page: 20 of 26

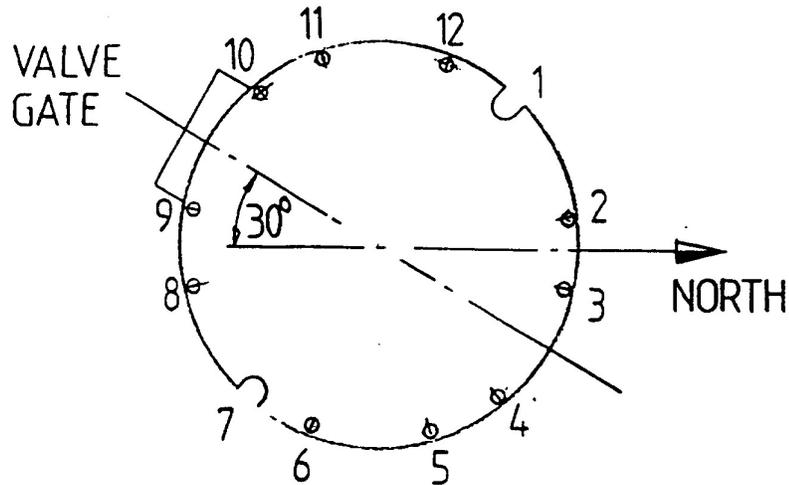


FIG2 VALVE -CFS BOLT LOCATION

VM STORAGE LOCATION	LOCATION AND BOLT	BOLT
A5.C5.E5.G5.J5.	1 AND 7	2,3,4,5,6,10,11,12.
K1.K2.K3.K4.	1 AND 7	2,3,4,5,6,8, 9,10.
ALL OTHER POSITIONS	1 AND 7	4,5,6,8,9,10,11,12.

TABLE 1 BOLTING PATTERN -CFS

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES

Identifier: TPR-5606

Revision*: 15

Page: 21 of 26

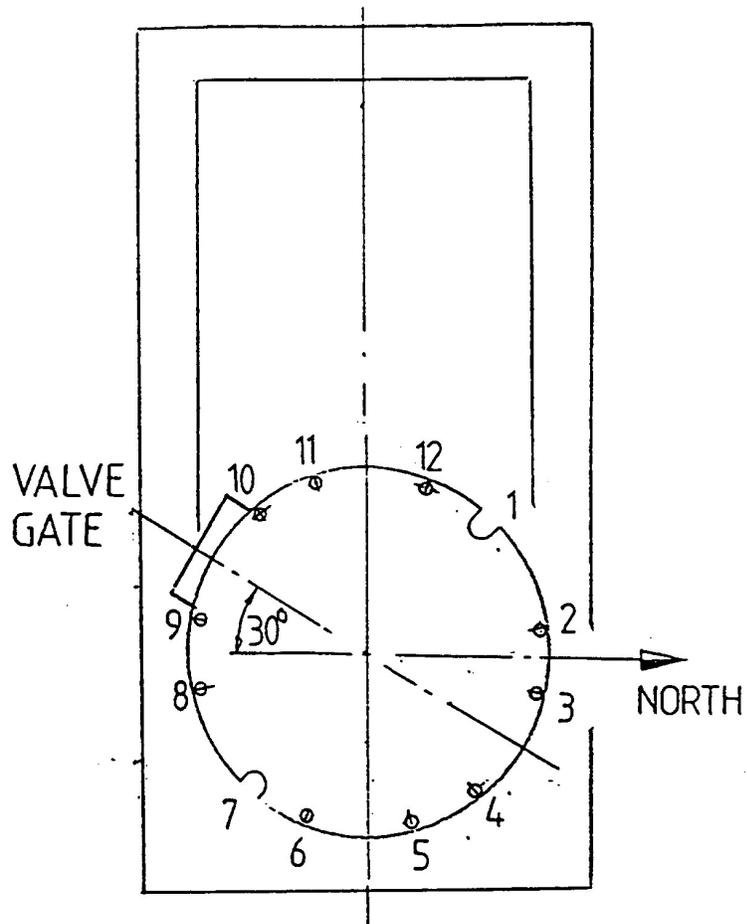


FIG 3 VALVE - CLUP BOLT LOCATION

POSITION	LOCATION	BOLT
CLUP	1 AND 7	2,3,4,5,6,8,9,10,11,12

TABLE 2 BOLTING PATTERN - CLUP

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES

Identifier: TPR-5606

Revision*: 15

Page: 22 of 26

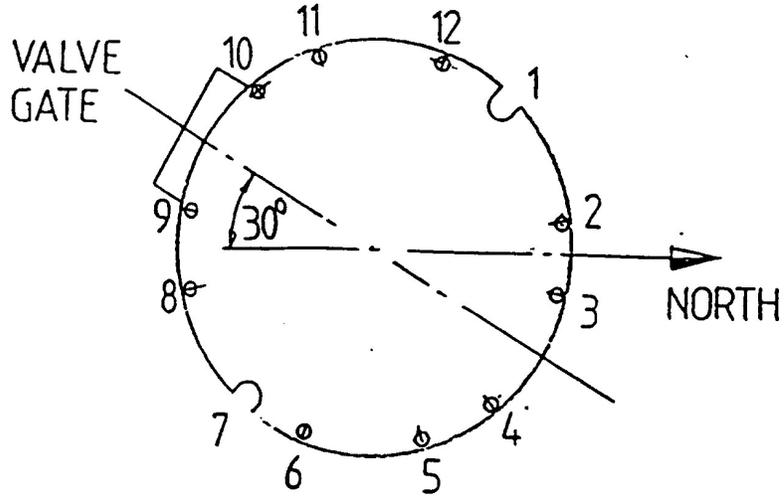


FIG 4 VALVE -SSW/NSW BOLT LOCATION

POSITION	LOCATION	BOLT
SSW/NSW	1 AND 7	2,3,4,5,6,8,9,10,11,12

TABLE 3 BOLTING PATTERN - SSW/NSW

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 23 of 26
--	---

Appendix C

Procedure Hazard Analysis

Highly Hazardous Activity? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	HPSC No.: TPR-5606
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Disciplines (SMEs) involved in hazard analysis: (Checking the box indicates discipline is/was involved in the hazard analysis for the procedure.)

	Discipline		Discipline		Discipline
<input checked="" type="checkbox"/>	Industrial Safety	<input type="checkbox"/>	RCT/RAD Eng.	<input type="checkbox"/>	Engineering
<input type="checkbox"/>	Industrial Hygiene	<input type="checkbox"/>	Env. Protection	<input checked="" type="checkbox"/>	Operations
<input type="checkbox"/>	Fire Protection	<input checked="" type="checkbox"/>	Quality Assurance	<input type="checkbox"/>	Other:

Required Job Training/Required Personal Protective Equipment	
Training	PPE
Certified Fuel Handler	Substantial footwear
Heat/cold stress	Appropriate gloves for operation with pinch points/chemicals
Fall protection (for at-risk workers)	Fall protection harness, fall arrest device, and connector strap
Industrial ergonomics	Eye protection
Personal Protective Equipment	

Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE	
1. General to all procedure	1a. Unqualified operator, unsafe condition of crane	1a. Personnel must verify crane operator qualification and familiarity with operation of the crane.	
	1b. Crane failure	1b. Personnel must verify that testing and inspection of the crane has been performed per the requirements of PRD-650.	
	1c. Rigging failure	1c.1	Personnel must verify that testing and inspection of rigging has been performed per the requirements of PRD-650.
		1c.2	Personnel must stay clear of suspended loads.
		1c.3	Personnel must use tag lines and long handled tools as appropriate for positioning loads.
		1c.4	Personnel must ensure eyebolts are fully seated.
	1d. Exceeding rated capacity of crane	1d.1	Personnel must verify load is within the capacity of the crane.
		1d.2	Personnel must perform lifts in accordance with procedure requirements.
	1e. Radiation/contamination	1e.1	Personnel must verify radiological conditions with RCT/RCM prior to beginning work.
		1e.2	Personnel must follow requirements of RWP if applicable.
1f. Pinch points	1f.	Personnel must wear leather gloves for pinch points associated with rigging.	

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 24 of 26
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Sequence Of Basic Job Steps	Potential Hazards	Hazard Control/PPE
(1 continued)	1g. Uneven walking/working surface	1g.1 Personnel must be aware of tripping hazards that occur through design.
		1g.2 Operator must be aware of proper body position while working on the Charge Face.
		1g.3 Personnel must wear substantial footwear.
	1h. Heat Stress	1h. Personnel must monitor heat stress in accordance with MCP-2704.
		1i. Ergonomics
	2. Installing or removing IV at designated location	2a. Chemical exposure
2b. Low level waste		2b. Personnel must dispose of low-level waste per MCP-62, "Waste Generator Services-Low-Level Waste Management."
3. Installing or removing SPHD 1 to IV	3a. Fall hazard	3a.1 Personnel must ensure inspection tags for fall protection harness, fall arrest device, and connector strap are current.
		3a.2 The crane must <u>NOT</u> be moved when personnel are attached to the fall arrest device on the crane hook.
		3a.3 The requirements of the current FSV FHPA must be followed.

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 25 of 26
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Appendix D

Procedure Basis

Procedure Review Table							
Review Discipline	Rev.	DFC Intent ^b Change	DFC Nonintent ^c Change	Review Discipline	Rev.	DFC Intent ^b Change	DFC Nonintent ^c Change
Operations Management	X ^a	X	X	Industrial Safety	X	X	X
Qualified Operator	X	X	X	Engineering			
Radiological Engineering				Industrial Hygiene			
Environmental				Other:			
Quality	X ^a	X	*				
<p>a. X = review required.</p> <p>b. Reviews for intent DFCs require the same discipline reviews required for a revision.</p> <p>c. Reviews for nonintent DFCs can be performed with only Operations management and a qualified operator’s review and then implemented for immediate use. However, the remaining discipline reviews, as indicated by an asterisk (*), must be obtained within two (2) weeks. See MCP-2985, “Chapter XVI – Operations Procedures,” for definitions of intent and nonintent changes.</p>							

Step	Basis	Source	Citation
2.1	Any potential deficiencies, hazard, or abnormal condition noted during the performance of this procedure must be entered in Appendix A, and reported verbally to the FSV ISFSI Manager.	Best management practice	
2.2	Personnel must follow the applicable hazard mitigations detailed in Appendix C, “Procedure Hazard Analysis.”	Procedure hazard analysis	

INSPECTION OF FSV ISFSI ISOLATION VALVES AND SHIELD PLUG HANDLING DEVICES	Identifier: TPR-5606 Revision*: 15 Page: 26 of 26
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Step	Basis	Source	Citation
2.3	When using this procedure to move components without handling fuel, steps may be marked “Not Applicable (N/A),” and minimum personnel requirements and required materials and equipment may be adjusted as appropriate for the evolution. All applicable Precautions and Limitations must be observed when handling individual components (such as, Container Handling Machine or isolation valves).	Best management practice	
3.1.4	Heat or Cold Stress monitoring must be performed per MCP-2704, “Heat and Cold Stress.”	Procedure hazard analysis	
3.3.1	Procedure performer must ensure the training requirements of Appendix C are met.	Procedure hazard analysis	
4.1.8 4.5.2 4.5.10 4.6.10 4.9.6	Fall protection equipment must be worn and be connected to the fall arrest device located on the crane hook.	Procedure hazard analysis	
4.2 4.4 4.5 4.7	Inspection of the IVs and SPHDs should be performed periodically.	GEC Alstom Engineering Systems LTD Technical Specification 362 F 0152-“Fort St. Vrain Maintenance, Inspection, and Monitoring Requirements”	6.1.5, 6.1.6
4.5.4 4.5.16 4.7.4 4.7.8	Personnel must wear powderless latex or nitrile gloves when lubricating components.		