FERMI 2 PROCEDURE - MAINTENANCE

CONTROLLED
VOID AFTER 3c DAYS
7-13-86
EXPIRATION DATE

TITLE: REACTOR VESSEL HEAD REMOVAL AND INSTALLATION

PROCEDURE NUMBER: 35.000.83

REVISION: 5

SAFETY CLASSIFICATION: SR

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Further Approval Required for SR or SP Procedures:

R. S. Lenart /s/	Date 05/12/86	OSRO Chairman or Alternate
R. S. Lenart /s/	Date 05/12/86	Plant Manager

The following approved Procedure Change Requests are incorporated in this revision:
T3808

This revision | |does |X|does not constitute periodic review.

Revision Summary:

WALK THROUGH SIGNATURES:

Farzin N. Ghodsi /s/	05/12/86
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ARMS - INFORMATION SYSTEMS

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PIS PIS File 1703.02 Recipient # 362

LINEAR IND & PITTING INDICATION

VISUAL INSPECTION INDICATES LINEAR IND. & PITTING IN "O" GROOVE

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5

1.0 PURPOSE

The purpose of this procedure is to provide detailed instructions for the removal and installation of the Reactor Vessel Head. This procedure will generally be performed in the sequence outlined in the Refueling Sequence Procedure, Reference 3.8.

This procedure addresses the concerns of License Commitments 2245, 2246, 2971, 2972 and 6964 listed in Reference 3.20. 5

2.0 EQUIPMENT LOCATION

The Reactor Vessel Head is installed at the top of the Reactor Vessel during normal plant operation. During refueling outage activities the Head will normally be stored over the cask washdown area as shown on the Reactor Building 5th floor laydown space drawing, Reference 3.15.

The Head Strongback may be stored on or off the Reactor Building 5th floor as determined appropriate by the Nuclear Shift Supervisor and Fuel Handling Supervisor.

3.0 REFERENCES

3.1 Plant Operations Manual (POM) Procedure 12.000.15, PN-21 (Work Order) Processing

3.2 POM Procedure 31.000.04, Control of Calibrated Maintenance Test Equipment

3.3 POM Procedure 31.000.02, Maintenance Record System

3.4 DELETED 5

*3.5 POM Procedure 12.000.46, Refueling Floor conduct of Operations (as applicable)

3.6 POM Procedure 32.000.12, Requirements For Operation of Cranes, Hoists and Lifting Devices

*3.7 POM Procedure 32.000.07, Reactor Building Crane Operation

*3.8 POM Procedure 32.000.09, Refueling Sequence

3.9 F10-00 Fermi II Heavy Load Rigging Manual

3.10 EF2-67,211, EF2-60,134, EF2-57,432, Control of Heavy Loads 5

3.11 Reactor Assembly and Servicing Equipment, GEK 45708

*Denotes "Use" Reference

3.12 Fermi II Reactor Vessel Manual, B1101A001JA002

3.13 BWR Servicing and Refueling Improvement Program - Phase I Summary Report NEDG - 21860 Class I C00-4174-1 September 1978

3.14 Fermi 2 Power Plant Approved/Controlled Materials List, NE-84-0344

*3.15 DECo Dwg 6C721-4858, Reactor Building Laydown Space-5th Floor | 5

3.16 NUREG 0612, Control of Heavy Loads at Nuclear Power Plants

*3.17 DECo File Dwg R1-51, Closure Head Final Machining

*3.18 DECo File Dwg R1-163, Miscellaneous Details - 251 "I.D. BWR

*3.19 DECo File Dwg R1-229, Closure Head Nozzle Details - 251" I.D. BWR

3.20 License Commitments 2245, 2246, 2971, 2972 and 6964 | 5

*3.21 DECo Dwg 6C721-2802, Reactor Pressure Vessel Head and Head Strongback Safeload Path

4.0 REQUIRED EQUIPMENT

4.1 Estimate of minimum tools, equipment, materials and manpower is as follows:

4.1.1 Reactor Pressure Vessel Head Removal

1. Manpower (3 to 5 hrs duration)
   a. One rigger
   b. One crane operator
   c. One supervisor
   d. Four mechanics
   e. One Health Phsyics representative
2. Special Tools
   a. Flange protector
   b. Head strongback
   c. Stud protectors and alignment sleeves

*Denotes "Use" Reference

3. Materials

a. Vessel Head "O" rings

Inner: 480-9092

Outer: 480-9093

4.1.2 Cleaning and Preparation of Vessel Head Sealing Surfaces and "O" Rings

1. Manpower (2 hrs each)

a. Four mechanics

b. One supervisor

2. Special Tools

a. Retainer ring pliers

4.1.3 Reactor Pressure Vessel Head Installation

1. Manpower (7 hrs duration)

a. One rigger

b. One crane operator

c. One supervisor

d. Four mechanics

e. One Health Physics representative

2. Special Tools

a. Head Strongback

b. Stud protectors and alignment sleeves

4.2 Measuring and test equipment used in performing this procedure will be recorded on Attachment 1, 2 or 3 (as applicable). 15

5.0 PRECAUTIONS AND LIMITATIONS

5.1 Observe the material and personnel accountability and control requirements of Refueling Floor Conduct of Operations, Reference 3.5. 15

5.2 Establish a designated storage area for parts removed during disassembly. Tag parts removed to ensure proper reinstallation. Document the storage area in the remarks section of Attachment 1, 2 or 3 (as applicable). 5

5.3 The following material, or approved equivalent will be used in the performance of this procedure.

5.3.1 Acetone

5.3.2 New or redistilled Isopropyl or Methyl alcohol

5.3.3 Soft cotton cloth

5.3.4 Power or hand wire brush as appropriate

5.4 The sealing surfaces of the Reactor Vessel and Reactor Vessel Head must be protected from scratches, indentations, and corrosive substances.

5.5 Examine sealing surfaces of the Reactor Vessel and Reactor Vessel Head for scratches, indentations, pitting or etching prior to installation of new "O" rings, and reassembly of the closure head on the vessel.

5.6 For the Reactor Vessel Head movement, ensure no obstacles are in the path of head movement. Observe the safe load path and lift height shown on Reference 3.21. Although the maximum lift height is listed as "unlimited," restrict the lift height to the minimum required to safely complete the movement of the vessel head.

5.7 The Reactor Vessel Head and associated components are subject to radioactive contamination. Radiation monitoring and protective measures shall be used to minimize exposure and avoid contamination of personnel and surroundings in accordance with the applicable Radiation Work Permit.

5.8 All maintenance and operations involved with the Reactor Vessel and its components shall be accomplished in strict compliance with approved procedures.

5.9 No welding, burning, chipping or grinding shall be allowed on the Reactor Vessel or Closure Head. In performing any welding near the vessel, use extreme care that NO ARC STRIKES are made on the vessel or closure head.

5.10 Due to the size, weight, and nature of the Reactor Vessel Head, care must be exercised to prevent inadvertent injury to personnel, or damage to Reactor internals or equipment, whenever lifting or transporting the head.

5.11 Observe head and strongback/turnbuckle match markings (as applicable). Additionally, every time the Vessel Head is lifted, the load distribution at the four lifting points should be visually checked to ensure that the turnbuckles are properly adjusted and that the head lifts squarely. An unequal load could result in personnel injury and/or severe equipment damage. 5

5.12 Vacuum ventilation of the Vessel Head is performed concurrently with portions of this procedure, during head removal. Vacuum ventilation of the head may be secured at any time the desired reduction in concentrations of hydrogen and radioactive gases are met, but must be completed prior to step 7.2.4. Coordinate with the Nuclear Shift Supervisor and Health Physics to secure vacuum ventilation of the Vessel Head.

5.13 Reactor Building Crane operation shall be in accordance with Reference 3.7.

5.14 Verify all shackles are securely fastened prior to each lift.

5.15 Due to contamination levels of the Reactor Vessel Head, the head should be wrapped in a suitable plastic material or otherwise contained for interim storage after removal as directed by Health Physics.

5.16 Ensure Health Physics personnel are notified and present to perform any necessary surveys, prior to lifting the Reactor Vessel Head away from the Reactor Vessel flange.

5.17 Prior to commencing Vessel Head or flange cleaning and/or "O"-ring inspection and replacement, obtain Health Physics approval. Special Radiation Work Permits may be required to perform certain steps for vessel head cleaning and preparation covered in Section 7.3, as designated by Health Physics. 5

6.0 PREREQUISITES

6.1 A PN-21 (Work Order) shall be processed and shall be released by the Nuclear Shift Supervisor in accordance with Reference 3.1 prior to the performance of this procedure.

6.2 Personnel performing this procedure shall be briefed on any item deemed necessary to minimize job time, radiation exposure and spread of contamination. These considerations should include ensuring that:

6.2.1 All required refueling floor radiation monitoring and alarm systems are in operation.

7.0 PROCEDURE

NOTE: Should any question or conflict arise in performance of this procedure, hold work at a safe point and inform the maintenance foreman in charge immediately so a resolution can be obtained.

NOTE: Approximate weights of components handled are:

Reactor Pressure Vessel Head - 89 Ton
Reactor Pressure Vessel head Strongback - 5 Ton

CAUTION
Vacuum ventilation of the Reactor Vessel Head is performed concurrently with portions of this procedure during head removal. Vacuum ventilation of the head may be secured at any time the desired reduction in concentrations of hydrogen and radioactive gases are met, but must be completed prior to step 7.2.4. Coordinate with the Nuclear Shift Supervisor and Health Physics to secure vacuum ventilation of the Vessel Head.

7.1 Preparation to Remove The Reactor Vessel Head

NOTE: The Head Strongback, shown in Enclosure 1, is a special lifting device provided to facilitate handling of the Reactor Vessel Head. The top centerplate of the strongback has a slot sized to accommodate the main hook (duplex hook) of the Reactor Building Overhead Crane. Two hook pins inserted through the holes in the strongback secure the crane hook in position.

The strongback is fitted with a set of turnbuckles and anchor shackles which connect to the lifting lugs on the Reactor Vessel Head for lifting. When stored, the turnbuckles are placed in a horizontal position on their support brackets.

NOTE: Refer to Enclosure 1.

7.1.1 Connect the Main Crane Hook to the Head Strongback

1. Verify that the two centerplate hook pins on the Head Strongback are retracted onto the pin supports.

2. Position and lower the main crane hook into the strongback hook box.

3. Locate the semi-circular groove in each hook pin so that it is facing downward.

4. Using the pin insertion tool (or similar device), push one of the hook pins through the hook box. Secure locking pin through the opening in the end of the hook pin to secure the hook pin in place. |5

5. Insert the second hook pin in the same manner and secure with locking pin. |5

6. Adjust crane hook until it seats securely into the recesses in the hook pins. Document on Attachment 1.

NOTE: Steps 7.1.2 and 7.1.3 may be performed concurrently.

7.1.2 Connect the Head Strongback to the Vessel Head

1. Lift and reposition the Strongback as necessary to allow turnbuckle adjustment. At each of the four lifting arms on the Strongback, move the Vessel Head Turnbuckle Assemblies from the stowed position to the lifting (downward hanging) position (as applicable).

CAUTION
Do not traverse over the spent fuel pool while transporting the Head Strongback.

2. Using the Reactor Building Main Crane, carefully lift and position the Head Strongback over the Vessel Head.

NOTE: Observe head and Strongback/turnbuckle match markings (as applicable). |5

3. Carefully lower the Head Strongback and manually align the lifting arms and turnbuckles with the lugs on the Vessel Head. See Enclosure 1.

4. With the lifting arms and turnbuckles properly positioned, attach the four shackles to the Vessel Head Lugs. Visually verify that all four turnbuckles are properly adjusted to equally share the load so that the Reactor Head will lift squarely. Document on Attachment 1. |5

7.1.3 Coordinate with Operations and I&C as necessary to provide a suitable method of monitoring flange temperatures prior to the removal of the Reactor Head thermocouples. S

7.1.4 Verify the vessel head is free for removal and if possible, make arrangements and set the vessel head replacement "O" rings inside the pedestals prior to removal of the head. Document on Attachment 1.

7.2 Reactor Vessel Head Removal

CAUTION

Observe the safe load path of Reference 3.21 for the Reactor Vessel Head movement. Ensure no obstacles are in the path of head movement. Although the maximum lift height is listed as "unlimited," restrict the lift height to the minimum required to safely complete movement of the vessel head. S

CAUTION

Coordinate Vacuum Ventilation and Vessel Head removal with operations and Health Physics as outlined in the Refueling Sequence procedure, Reference 3.8.

7.2.1 Prerequisites of Steps 6.1 through 6.6 have been met as (applicable). S

7.2.2 Begin to take a slight strain on the head strongback without lifting the head, and ensure turnbuckles are equally taking up the load. Again, perform a visual inspection to verify there are no obstructions which would restrain head lift or movement.

CAUTION

During the initial lift of the Vessel Head (step 7.2.2), ensure by visual observation that there is no binding and that the head begins to lift clear of the Vessel Flange evenly at the 0°, 90°, 180°, and 270° Reactor flange azimuth.

7.2.3 With Personnel approprately located to observe the Vessel Head Lift at the 0°, 90°, 180°, and 270° Reactor

flange azimuth points, begin to lift the head. If any binding is observed secure the lift and correct the cause as necessary. When the head has been lifted several inches check the head and vessel flanges for parallelism. A machinist level or similar device will be sufficient for this check. Make adjustments as determined necessary to prevent interference. Document on Attachment 1.

CAUTION

If not already done, coordinate with the Nuclear Shift Supervisor, and Health Physics to secure ventilating the Vessel Head. Ensure the desired reductions in concentration of Hydrogen and Radioactive gases have been met prior to securing head ventilation.

7.2.4 Continue to raise the head enough to visually verify Reactor water level is above the top of the Steam Dryer. Ensure head does not bind on alignment sleeves (on stud covers 1 and 34) or studs as it is lifted. Have water level adjusted if necessary.

7.2.5 Lift the Vessel Head out of the Reactor Cavity and transport to the laydown area observing the safe load path shown on Reference 3.21 for the Reactor Vessel Head. Although the maximum lift height is listed as "unlimited," restrict the lift height to the minimum required to safely complete movement of the vessel head. 5

CAUTION

Due to contamination levels of the Reactor Vessel Head, the head should be wrapped in a suitable plastic material or otherwise contained, as directed by Health Physics.

7.2.6 Carefully guide the Vessel Head down on the three (3) Head Holding Pedestals over the Cask Washdown Area, refer to Reference 3.15 or 3.21, as necessary. 5

NOTE: The Strongback may be disconnected and rotated as necessary to allow it to rest on blocking on the head for intermediate storage. Suitable straps (or slings) and takeups or other appropriate restraining devices must be used to secure the Strongback in place on the head. Other storage arrangements may be made as determined appropriate by the Nuclear Shift Supervisor and Fuel Handling Supervisor.

7.2.7 Slacken the Crane Cable and disconnect the Strongback from the head.

7.2.8 With the Strongback appropriately stored/secured and crane cable slackened disengage locking pins from the ends of the Strongback hook pins. Using the pin insertion tool, or (similar device) push the hook pins onto the pin supports to free the crane hook from the center plate. Raise the crane hook clear of the strongback centerplate. |5

7.2.9 Arrange for installation of vessel flange protectors, as determined necessary. |5

7.2.10 Proceed with preparation for Refueling activities in accordance with Reference 3.8.

7.3 Cleaning And Preparation Of Vessel Head Sealing Surfaces And "O" Rings

CAUTION

Prior to commencing Vessel Head or flange cleaning and/or "O"-ring inspection and replacement, obtain Health Physics approval. Special Radiation Work Permits may be required to perform certain steps covered in this Section (7.3), as designated by Health Physics.

NOTE: Refer to Reference 3.19, Closure Head Nozzle Details, as necessary.

7.3.1 Prerequisites of Steps 6.1. through 6.3 and Step 6.6 have been met.

7.3.2 Clean and inspect the sealing surfaces of the head vent and spray flanges and pipes. See step 5.3 for recommended cleaning materials. |5

NOTE (1): Refer to References 3.17 and 3.18, as necessary.

NOTE (2): Arrange for "O"-ring support as necessary during removal from the head.

7.3.3 Remove the used "O"-rings, one at a time, from the head "O" ring grooves by removing the retainer clips which hold them in place (16 clips each). To do this remove the retainer rings which hold the clips to the pins.

7.3.4 Clean the sealing surfaces of the head flange and the "O" ring grooves using the appropriate materials listed in step 5.3 or approved equivalents. Also, clean the upper head pipe flange connections, as necessary. Document on Attachment 2. S

7.3.5 Inspect the head flange and "O" ring grooves (see Step 5.5). Also, inspect the upper head pipe flange connections. If significant damage is noted on any flange surfaces, contact the responsible Foreman to arrange for an appropriate resolution. Document on Attachment 2.

CAUTION

Head "O" rings are silver plated stainless steel. Do not reuse "O" rings. During installation or handling of new "O" rings use caution to prevent scratching of silver plating or excessive spring. Do not spread the "O" ring retainers any wider than is necessary to engage the groove in the retainer pins.

NOTE: If the new replacement "O" rings are already located inside the pedestals and under the head proceed with step 7.3.12.

7.3.6 Observe head and strongback/turnbuckle match markings (as applicable). Additionally, every time the Vesel Head is lifted, the load distribution at the four lifting points should be visually checked to ensure that the turnbuckles are properly adjusted and that the head lifts squarely. An unequal load could result in personnel injury and/or severe equipment damage. S

7.3.7 Connect the main crane hook to the head strongback and vessel head as necessary in accordance with Steps 7.1.1, and 7.1.2.

7.3.8 Raise the head to a height suitable to remove the used "O" rings from under the head, and to position the new "O" rings under the head without damaging.

7.3.9 Carefully lower the head back down onto the Head Holding Pedestals.

NOTE: Steps 7.3.10 through 7.3.12 may be worked concurrently.

7.3.10 Slacken the Crane Cable and disconnect the Strongback from the head.

7.3.11 With the Strongback appropriately stored/secured and crane cable slackened disengage the locking pins from the ends of the Strongback hook pins. Using the pin insertion tool (or similar device), push the hook pins onto the pin supports to free the crane hook from the center plate. Raise the crane hook clear of the strongback centerplate. 5

7.3.12 Install the two (2) new "O" rings in the "O" ring grooves of the Vessel Head, one at a time, using the retainer clips (16 clips each). The tongue of the retainer clips engage the slots provided in the "O" rings and are secured to the retainer pin by a retainer ring. The retainer ring is installed using retainer ring pliers and seated in the groove of the retainer pin with a retainer punch or similar device. Document on Attachment 2.

7.4 Reactor Vessel Head Installation

7.4.1 Prerequisites of Steps 6.1 through 6.3 and 6.5 and 6.6 have been met.

7.4.2 Ensure that the closure head studs have been cleaned and inspected. Ensure that the studs removed for refueling, inspection or maintenance have been re-installed. Ensure the Stud thread protection covers and alignment sleeves (on Studs 1 and 34) are installed.

7.4.3 Ensure the Vessel Head sealing surfaces and "O" ring grooves have been cleaned, and new "O" rings have been installed per Section 7.3. 5

7.4.4 Clean and inspect the vessel flange mating surface in the reactor cavity in preparation for head installation. See Step 5.3 and 5.5. Document on Attachment 3.

7.4.5 Connect the main crane hook to the head strongback and head in accordance with steps 7.1.1 and 7.1.2.

CAUTION

When lifting the Reactor Vessel Head observe the safe load path shown on Reference 3.21. Although the maximum lift height is listed as "unlimited," restrict the lift height to the minimum required to safely complete movement of the vessel head. Every time the Vessel Head is lifted, the load distribution at the four lifting points should be visually checked to ensure that the turnbuckles are properly adjusted and that the head lifts squarely. An unequal load could result in injury to personnel and severe equipment damage.

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NOTE (1): The head and vessel flanges shall be checked for parallelism (within 0.045" per foot diametrically is the desired range) (this equates to within 1" [approximately] overall for the 23' diameter across the flanges) to prevent binding of the vessel head with the studs during installation. A machinist level or similiar device will be sufficient for this check.

5

NOTE (2): If adjustment of turnbuckles is required the head must be landed. Turnbuckles cannot be adjusted under load.

7.4.6 Lift the Vessel Head several inches and check for parallelism between the head and vessel flanges. Adjust the turnbuckles, as necessary. Document on Attachment 3.

7.4.7 Slowly continue to lift the head off the Head Holding Pedestals. Check to ensure the flange mating surface and "O" rings are clean and that the "O" rings are properly positioned and held in place. Observing the safe load path of Reference 3.21, transport the Vessel Head into position over the Reactor Vessel to within several feet of the studs.

5

CAUTION

The head may shift slightly as it is transported from the Refueling Floor into position over the vessel flange. It is recommended that the head and vessel flanges be rechecked for parallelism prior to attempting to lower it over the studs and onto the vessel flange. This will help to prevent binding between the head and studs and ensure an even mating of the "O" ring seals with the vessel flange. If adjustment is required, appropriate temporary blocking may be arranged in the reactor cavity between the flanges (head and vessel) to support the head allowing the turnbuckles to be unloaded for adjustment.

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7.4.8 With the head properly orientated for correct azimuth, slowly and incrementally continue to lower the head with personnel in position to guide and properly align the head with the vessel flange and studs. Use caution to ensure the head does not bind with stud covers, or alignment sleeves (on studs 1 and 34). Lower the head to within approximately 1' of the vessel flange.

7.4.9 Perform a final verification for proper head to vessel flange alignment, and that the vessel flange and head mating surfaces are still clean. Also ensure the "O" rings have remained properly seated in their grooves.

CAUTION

Coordinate with operations, to monitor vessel water level carefully until the head is fully tensioned. Ensure water level does not exceed the level of the vessel flange. Improper sealing may occur if water level is allowed to exceed that of the vessel flange after the head is set in place and prior to full head tensioning.

7.4.10 Coordinate with operations to drain the flange leak detection sensing lines. The lines are drained by opening valves B21 F070 (V17-22041) and B21-F071 (V17-2042). Following completion of draining the valves should be closed and locked.

7.4.11 Finish setting the head on the vessel flange ensuring proper seating of "O"-rings (i.e., head setting squarely on flange and not binding on studs, covers, or alignment sleeves [on studs 1 and 34]). Document on Attachment 3. 5

7.4.12 Disconnect the Head Strongback from the Vessel Head as follows:

1. Disassemble all four shackles from the lifting lugs on the Vessel Head and return the turnbuckles and shackles to their stowed position on the strongback lifting arms as necessary. 5

2. Carefully raise the Head Strongback and return it to its designated storage area on the Refueling Floor or off the floor as determined appropriate by the Nuclear Shift Supervisor and Fuel Handling Supervisor.

3. With the strongback properly placed, lower the crane hook to slacken the cable. Disengage the locking pins from the ends of the strongback hook pins, and using the pin insertion tool (or similar device), push the hook pins onto the pin supports to free the crane hook from the centerplate. 5

4. Raise the crane hook clear of the centerplane.

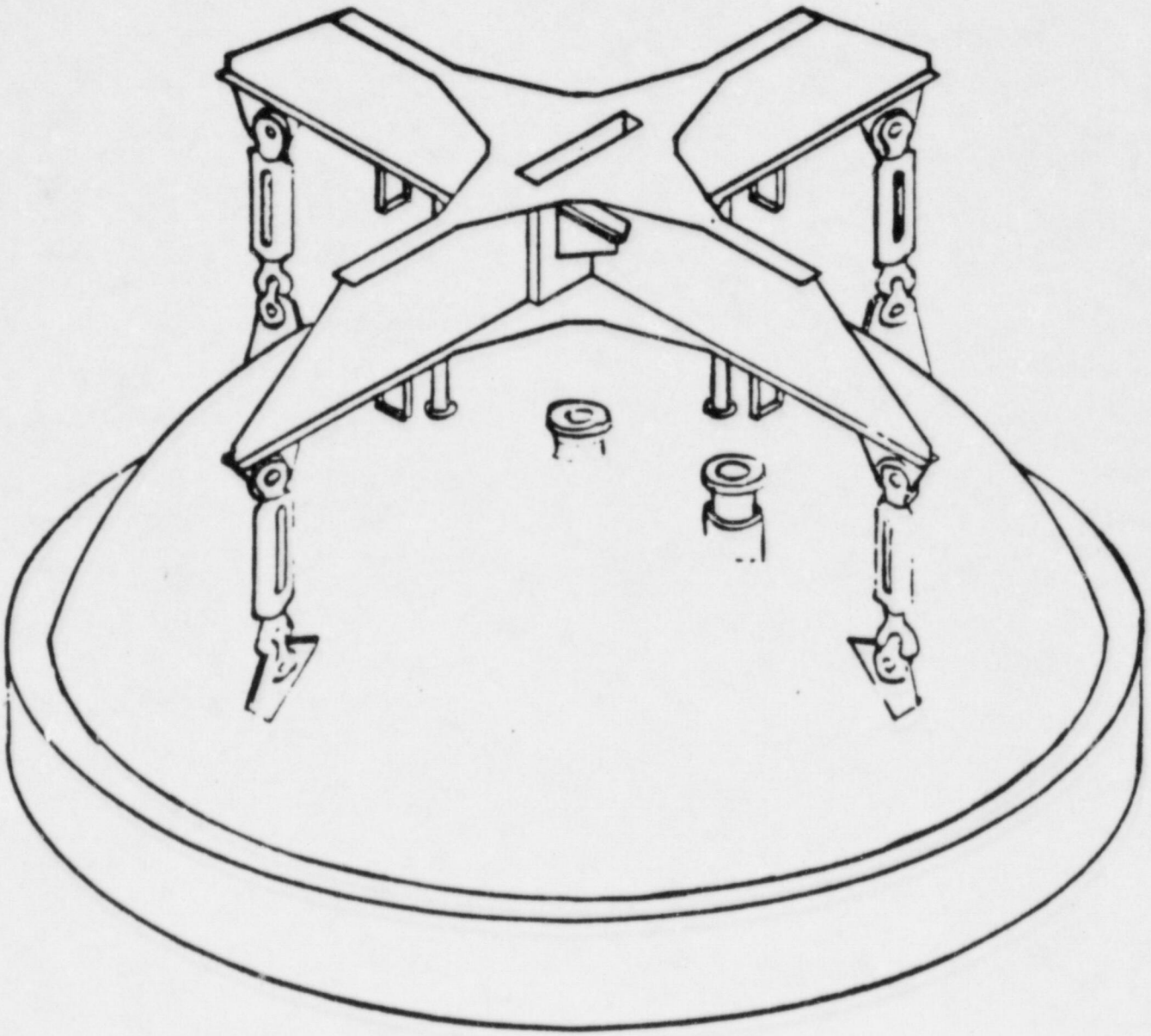
7.4.13 The head is now ready for stud nut installation and tensioning as directed by the Refueling Sequence Procedure, Reference 3.8.

7.5 Restoration

7.5.1 After successful completion of all inspections and tests (as applicable), the Protection Leader/Work Leader shall sign the Maintenance Order and process the PN-21 in accordance with Reference 3.1.

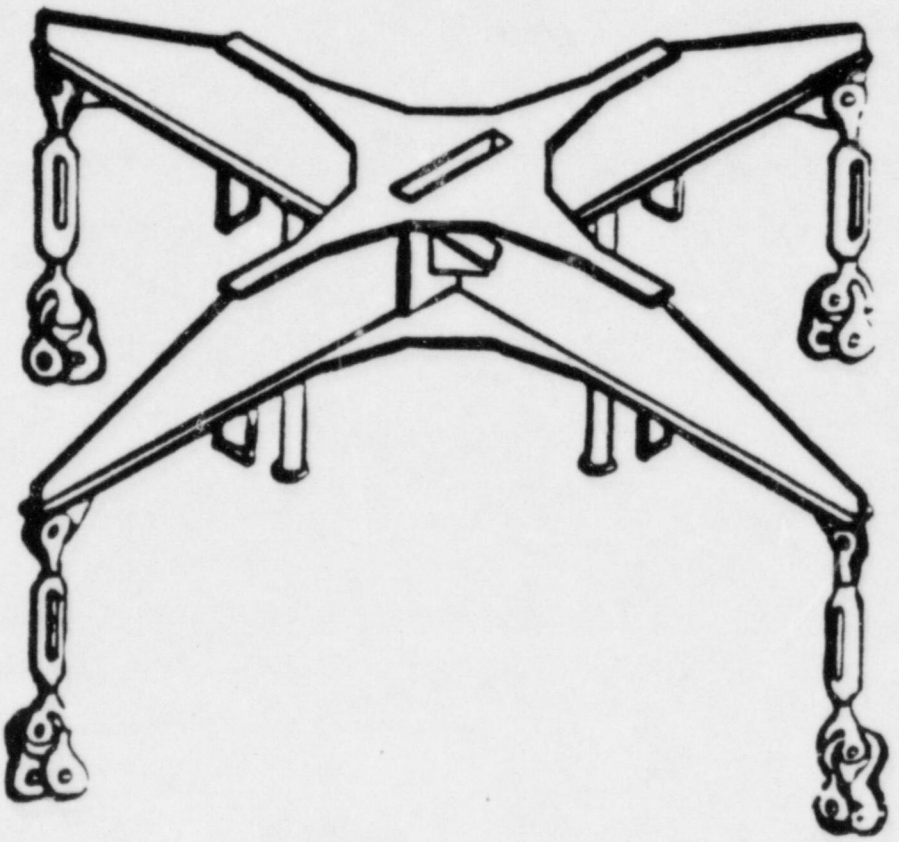
END OF TEXT

HEAD STRONGBACK AND ATTACHMENTS



083085

HEAD STRONGBACK AND ATTACHMENTS



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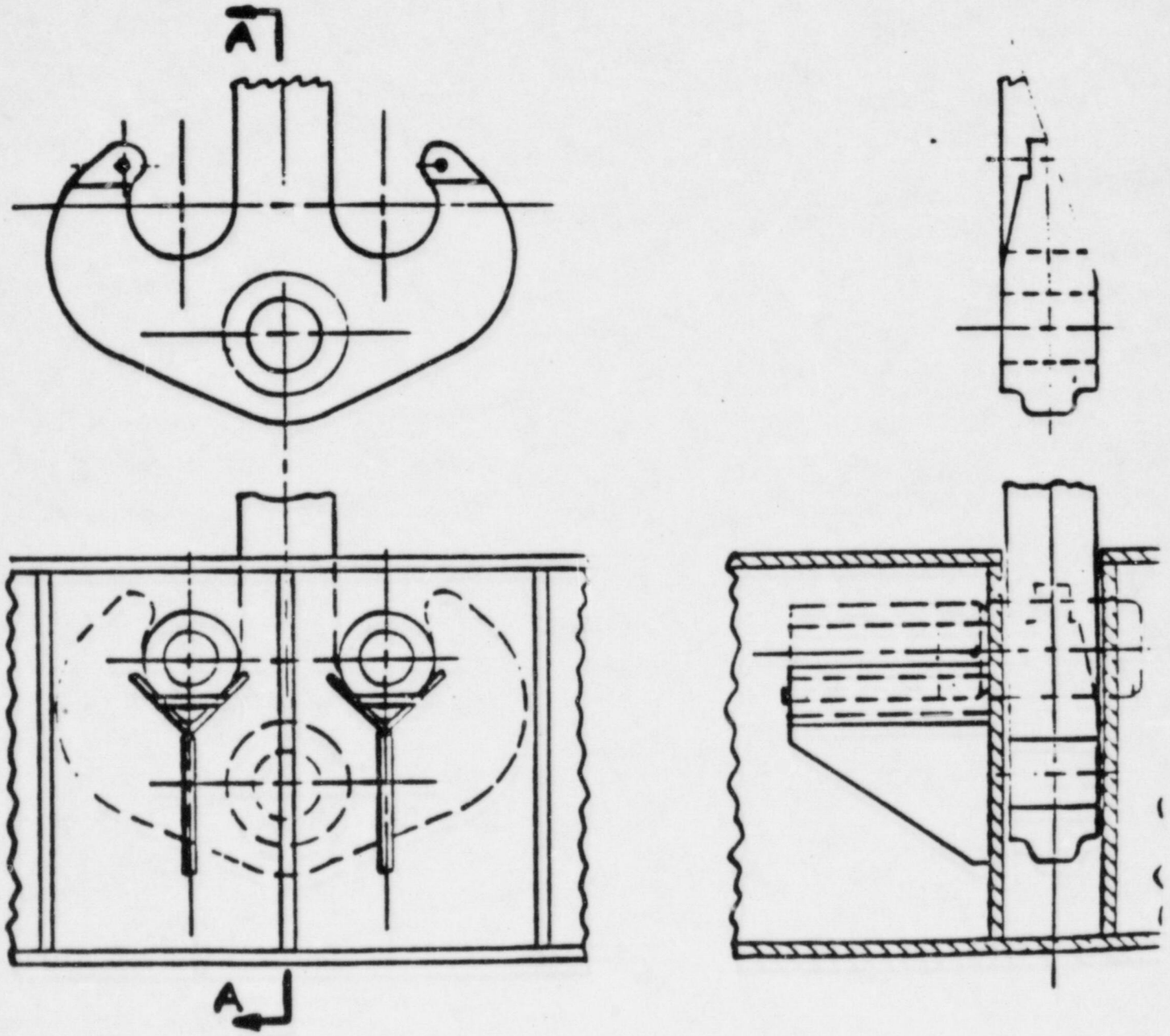
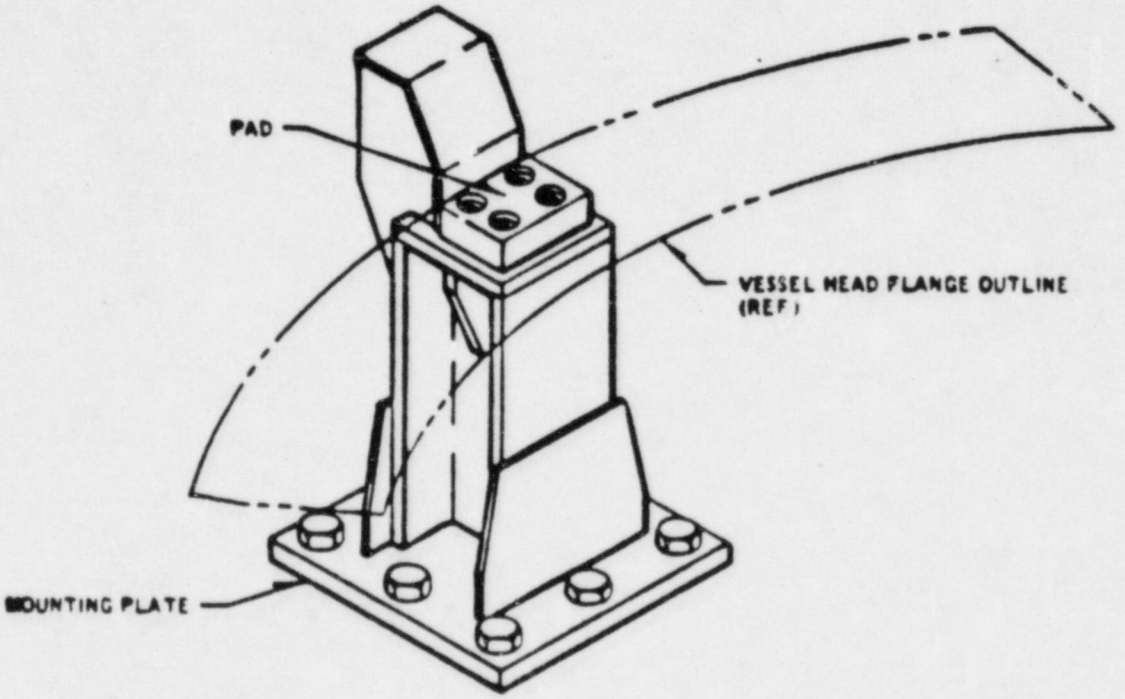
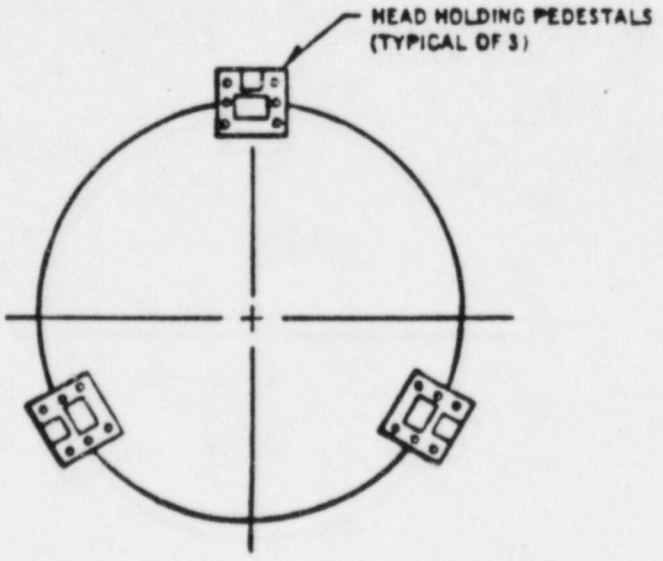


HEAD HOLDING PEDESTAL





VESSEL HEAD REMOVAL
MAINTENANCE DATA SHEET

PIS No. B1101A001 PN-21 No. _____

Prerequisites Met _____ / _____
Signature / Date

Step No.	Description	Data	Acceptance Criteria	M&TE Serial No.	Verified by/Date
7.1.1.6	Crane hook attached to strongback	NA	hook pins seated securely in hook recesses	NA	/
7.1.2.4	Strongback attached to head	NA	turnbuckles adjusted to equally share load	NA	/
7.1.4	Head free for removal	NA	No visible obstructions	NA	/
7.2.3	Head leveled	NA	Parallel with vessel flange	NA	/

Test Equipment	Serial No.	Range	Calibration Due Date

Remarks: _____

Completed By: _____

Name (Print) Signature Initials Employed By Date

Reviewed By: _____ / _____
Foreman /Date

Approved By: _____ / _____
Maintenance Engineer/Date
or Designee

CLEANING AND PREPARATION OF VESSEL HEAD SEALING SURFACES AND "O"-RINGS MAINTENANCE DATA SHEET

PIS No. B1101A001 PN-21 No. _____

Prerequisites Met _____ / _____
Signature / Date

Step No.	Description	Data	Acceptance Criteria	M&TE Serial No.	Verified by/Date
7.3.4	Headflange and "O" ring grooves cleaned	NA	see step 5.3	NA	/
7.3.5	Inspect head flange and "O" ring grooves	NA	see step 5.3, document discrepancies in remarks section	NA	/
7.3.12	Install new flange "O" rings	NA	All 32 (16 per "O" ring) retainer clips secured to retainer pins	NA	/

Test Equipment	Serial No.	Range	Calibration Due Date

Remarks: _____

Completed By: _____

Name (Print)	Signature	Initials	Employed By	Date

Reviewed By: _____ / _____
Foreman /Date

Approved By: _____ / _____
Maintenance Engineer/Date
or Designee

VESSEL HEAD INSTALLATION MAINTENANCE DATA SHEET

PIS No. B1101A001 PN-21 No. _____

Prerequisites Met _____ / _____
Signature / Date

Step No.	Description	Data	Acceptance Criteria	M&TE Serial No.	Verified by/Date
7.4.4	Clean and inspect the vessel, head flange mating surface	NA	See steps 5.3 and 5.5	NA	/
7.4.6	Head leveled	NA	Parallel with vessel flange within 0.045" per foot diametrically	NA	/
7.4.11	Head properly seated on vessel flange	NA	Flanges square and not binding	NA	/

Test Equipment	Serial No.	Range	Calibration Due Date

Remarks: _____

Completed By: _____

Name (Print) Signature Initials Employed By Date

Reviewed By: _____ /
Foreman /Date

Approved By: _____ /
Maintenance Engineer/Date
or Designee

END

051286

32X magnification

scribe mark put on for reference

indication

1

DAILY REPORT RIII

DATE 06/19/86

FACILITY/LICENSEE: CLINTON

NOTIFICATION: TELEPHONE BY LICENSEE

SUBJECT: SHORT IN ELECTRO HYDRAULIC CONTROL (EHC) CIRCUIT

EVENT: ILLINOIS POWER COMPANY REPORTED THAT A FLASH OCCURRED IN A PANEL WHEN THE EHC UNIT WAS ENERGIZED FOLLOWING MAINTENANCE.

INITIAL REVIEW INDICATES THAT A METAL CABLE IDENTIFICATION TAG SHORTED BETWEEN TWO OF THE 480 VOLT TERMINALS IN THE PANEL.

THE LICENSEE WILL BE INVESTIGATING TO DETERMINE THE CIRCUMSTANCES IN WHICH THE METAL TAG WAS PLACED ACROSS THE TERMINALS.

REGIONAL ACTION: THE INCIDENT WILL BE FOLLOWED BY EITHER REGIONAL OR RESIDENT INSPECTOR.

FACILITY/LICENSEE: FERMI 2

NOTIFICATION: TELECON FROM RESIDENT INSPECTOR

SUBJECT: INDICATIONS ON REACTOR PRESSURE VESSEL HEAD

EVENT: ON WEDNESDAY AFTERNOON, JUNE 18, 1986, REGION III WAS INFORMED BY DETROIT EDISON COMPANY (DECO) THAT NUMEROUS INDICATIONS WERE OBSERVED ON THE REACTOR PRESSURE VESSEL HEAD INSIDE THE INNER "O" RING GROOVE. SOME OF THE INDICATIONS APPEAR TO BE ABOUT 0.003 INCHES DEEP. DECO IS SETTING UP A TASK FORCE TO INVESTIGATE THE MATTER AND ALREADY HAD GE AND OTHER CONSULTANTS INVOLVED. THE DECO REPRESENTATIVE ALSO INFORMED REGION III THAT SIMILAR TYPE INDICATIONS HAD BEEN DISCOVERED IN THE PAST ON THE TOKAI 2 REACTOR.

REGIONAL ACTION: THE RESIDENT INSPECTORS AND REGIONAL MANAGEMENT WILL CLOSELY FOLLOW THE INVESTIGATION.

FACILITY/LICENSEE: GENERAL

NOTIFICATION:

SUBJECT: THE NRC APPOINTED MATERIALS SAFETY REGULATION STUDY GROUP, COMPRISED OF DR. CLIFFORD SMITH, MR. EDSON CASE, MR. THOMAS ENGELHARDT, MR. RALPH PAGE, AND DR. JOHN GOGGIN, AND THE GROUP'S NRC LIAISON, DR. DONALD COOL, WILL VISIT THE REGION III OFFICE JUNE 19, 1986 TO DISCUSS FUEL FACILITY AND MATERIALS LICENSING AND INSPECTION MATTERS.

EVENT:

REGIONAL ACTION: INFORMATION

N

RPV INDICATIONS

- INDICATIONS OBSERVED IN INNER "O" RING GROOVE
- SIMILAR TO THOSE FOUND IN PAST ON TOKAI 2
- APPEAR TO BE CHEMICAL CORROSION
- LICENSEE/GE/REGION III EVALUATING

No. 004357

Edison — Deviation / Event Report

Number NP-36-0244 Page 1 of

Part 1 — Identification and Description

Title

Indications on Seating Surface Reactor Head

B. Occurrence - Date	Time	C. Safety - Related	D. System	E. PIS
06-12-86	1345 hrs	[X] Yes [ ] No	B 1 1 - 0 1	B 1 1 0 1 A 0 0 1 1

F. Description of occurrence or condition: Numerous indications of unknown origin in seating surface of "O" Ring grooves, both inner and outer grooves.
VISUAL INSPECTION INDICATES LINEAR INDICATION AND PITTING IN THE "O" RING GROOVES.

SEE ATTACHED Actions (1)

G. Immediate action: Informed D. Cole of DECO Maintenance, who contacted G. E. Reps. on site.

H. References	I. Initiator	Org./Section	Date
35.000.83 Sect. 7.3	Barb Pyle	M&MA/QA	6-13-86
	J. Initiator's Supervisor: James Paton		Date 6-13-86

Part 2 — Reportability

A. 10CFR50.72 [ ] Yes [X] No [ ] 1 Hr. [ ] 4 Hr.
10CFR50.73 [ ] Yes [X] No
10CFR21 [ ] Yes [X] No

Person Contacted
Date Time
LER Number
LER Due Date

B. Determined By: R. Engle for JT — Org/Sec: Nuc Prod — Date 6-14-86

Part 3 — CARB Review

a. Accept description of occurrence and immediate action [X] Yes [ ] No
b. Accept reportability determination [X] Yes [ ] No
C. OSRO meeting required [ ] Yes [X] No — Meeting No. — Date
D. Evaluation and Action Assignment:
[ ] NQA [ ] NT [ ] NA [ ] NOM
[ ] NE [ ] NS [X] NP [ ] MNPM
Evaluator — Section
E. Evaluation due date: 6-23-86

F. Carb-NP Only
[ ] Maintenance [ ] Rad Chem
[X] Technical [ ] Other
Evaluator — Section: DHE/EM
G. CARB Approval: J. D. Cole — Date: 6/16/86 *

Part 4 — Evaluation

A. Describe the root cause of the deviation

Determined By — Org / Section — Date

B. Remarks

(If required, attach a Corrective Action Sheet)

Part 5 — Work Completion

C. Approved By — Org / Section — Date *

Part 6 — NQA Completion Review

Reviewed By — Section — Date *

* Send To CAC

DE 963-6631 08-85X

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DAILY REPORT REGION III

DATE: 07/11/86

FACILITY/LICENSEE: CLEVELAND ELECTRIC ILLUMINATING COMPANY
PERRY NUCLEAR POWER PLANT UNIT 1

NOTIFICATION: REGIONAL INSPECTION TEAM

SUBJECT: OFFGAS SYSTEM CHARCOAL ADSORBER FIRE (UPDATE)

EVENT: ON JULY 11, 1986, THE LICENSEE PRESENTED THE NRC WITH THE PLAN FOR RECOVERY FROM THE CHARCOAL ADSORBER BED COMBUSTION EVENT. THE RECOVERY PLAN HAD BEEN REVISED TO INCLUDE REMOVAL AND REPLACEMENT OF CHARCOAL IN ALL EIGHT OFFGAS SYSTEM ADSORBER BEDS. THE LICENSEE PLANS TO PRESENT THE CHARCOAL UNLOADING AND LOADING PROCEDURES MTI-0006 BEFORE NOON TODAY. THE LICENSEE HAS NOT FIRMED UP A TIME AND DATE FOR CHARCOAL UNLOADING BUT IT APPEARS THAT UNLOADING MAY TAKE PLACE MONDAY. THIS AFTERNOON THE LICENSEE WILL DISCUSS WITH THE NRC THE WORK THAT WILL TAKE PLACE OVER THE WEEKEND FOR THE CHARCOAL REMOVAL.

REGIONAL ACTION: FOLLOWUP BY THE RESIDENT AND REGIONAL INSPECTION STAFF TO VERIFY LICENSEE ACTIONS SET FORTH IN THE CONFIRMATORY ACTION LETTER ISSUED BY REGION III ON JUNE 23, 1986.

Facility/Licensee: Fermi 2

Notification: SRI

Subject: REACTOR VESSEL HEAD INDICATIONS

Event: During the week of July 1, 1986, the licensee completed inspections on the RV head and flange. Of the 200 indications on the RV head only one had any depth greater than 0.005". This indication was .027" deep. The RV flange did not have as many indications as the head and none had any depth greater than .005". Based on G.E. recommendations the .027" indication was weld repaired on Sunday, July 6, 1986 by GE personnel. Weld repair was completed by grinding out the indication to a depth of .040" and welding new cladding in the ground out area.

Regional Action: Information and followup per MC2515

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