

ATTACHMENT 2

DRESDEN FUEL PROCEDURE 800-21:  
FUEL HANDLING GRAPPLE OPERATION

8102060

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A. PURPOSE

The purpose of this procedure is to outline the proper operation of the fuel handling grapple.

B. REFERENCES

1. None.

C. PREREQUISITES

1. Ensure refueling INTERLOCKS are operable (800-S-1).

D. PRECAUTIONS

1. None.

E. LIMITATIONS AND ACTIONS

1. None.

F. PROCEDURE

1. Select the desired operation station by positioning the selector switch to either Monorail, Frame or Console. Depress the system START button.
  - a. If any of the Operator's control console varispeed levers are not at their neutral position, it will not be possible to energize the control system.

CAUTION

If the interlock on the auxiliary monorail hook has been bypassed, do not attempt to move fuel using this hook.

2. Allow time for warmup of the controls and time for the air compressors to fully charge its associated air volume tank.
3. Raise the grapple to its upper limit of travel by pulling the grapple raise-lower control lever toward you.
4. Use the forward, reverse, left and/or right control lever to position the grapple over the assembly to be moved.
  - a. An assembly as used here may be a fuel assembly, control rod blade or other core component which can be handled by the grapple.
  - b. Two dial indicators are provided in the Operator's console to assist the Operator in positioning the grapple over the core grid assembly position. They consist of numbers from 01-59 on the X-X axis and 02-60 on the Y-Y axis.

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5. If optical aid is required for clear observation of the assembly handle and the grapple head, lower a drop light to the desired depth. Do not connect power to the drop light until it is submerged in the water.
6. Push the raise-lower control lever away from you and lower the grapple head to a position immediately above the assembly handle.
7. Correct minor misalignment between the grapple and the assembly handle by manipulating the Traverse button.
8. OPEN the grapple hook, paying strict attention to orientation, and slowly lower the grapple until it comes to rest on the assembly handle. The grapple latched light should be off. Downward movement of the grapple ceases when the slack cable switch is actuated and slack cable indicator window lights.
9. CLOSE the hook after it is confirmed that grapple is secure and down over the bale on the assembly. GRAPPLE LATCHED light should be ON. This informs the operator that the fuel lifting bail is properly engaged within the grapple receptacle and is contacting the bell crank.

CAUTION

HOIST LOADED indication must be operable when an assembly is to be picked up from the core. If GRAPPLE LATCHED indication is not operable a second independent verifier must visually verify that the assembly is latched and following and then initial the appropriate place on the Nuclear Materials Transfer Checklist indicating that the verification has been performed.

10. Raise the fuel assembly until the GRAPPLE NORMAL UP light is lit. This assures that the assembly is high enough for horizontal movement.
11. Use the forward, reverse, lift, and/or right control levers to position the assembly over a rack or core module into which it is to be inserted.
12. Lower the assembly slowly using the Grapple Lever into its designated position in the core or rack. The load must be released from the grapple before the hook can be actuated. Downward movement of the grapple ceases when the slack cable switch is actuated and the slack cable indicator lights.

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13. OPEN the grapple hook and slowly raise the grapple until it disengages the handle of the assembly.
14. Raise the grapple high enough for the horizontal movement required in subsequent operations.
15. Repeat steps F.4. through F.14.

G. CHECKLISTS

1. DFP 800-S4 Nuclear Materials Transfer Checklist (DFP 800-1).

H. TECHNICAL SPECIFICATION REFERENCES

1. None.

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