

## UNCONTROLLED COPY PLANT PROCEDURES MANUAL

WNP-2

PROCEDURE NUMBER	APPROVED	DATE
*1.3.9	<i>J. Martin</i>	10/31/83
VOLUME NAME		
1	ADMINISTRATIVE PROCEDURE	
SECTION		
1.3	CONDUCT OF OPERATIONS	
TITLE		
*1.3.9	MECHANICAL JUMPERS AND LIFTED LEADS	

1.3.9.1 Purpose

The purpose of this procedure is to establish the method of controlling electrical and mechanical jumpers, and lifted leads.

1.3.9.2 References

- A. ANSI N18.7-1976, Section 5.2.6 (Equipment Control)
- B. Operational QA Program Description
- C. PPM 1.3.6, Shift Turnover
- D. PPM 1.4.1, Plant Modifications

1.3.9.3 Scope

- A. This procedure shall be used for all safety-related and non-safety-related systems.
- B. This procedure applies with the following exclusions:
  1. This procedure does not control the use of "installed bypass", i.e., key-lock switches, bypass switches, mode switches, and test devices which are used in accordance with other appropriate plant procedures.
  2. Electrical and mechanical jumpers or lifted leads which are positively identified in approved procedures are excluded from the requirements of this procedure. To qualify for the exclusion, the other procedure must:
    - a. Clearly specify that the Shift Manager must be notified prior to installation and removal.

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- b. The other procedure identifies the need for independent verification of installation and removal (if required).
- c. If the procedure is completed or delayed for more than one shift, the jumper or lifted lead must be returned to normal or the control of them transferred to the provisions of this procedure.
- d. Pipe caps or blank flanges used to stop leakage are visible from the isolation valve are excluded from the requirements of this procedure.
- e. The jumpers or lifted lead tags are controlled by the Shift Manager and are issued by him to the procedure used to control the work.

NOTE: PM/Calibrations done as part of SMS or troubleshooting done per an approved MWR qualify for this exception. The need for independent verification will be noted on the task card or MWR where applicable. This need will be identified by the Maintenance Supervisor based on experience, job complexity and for importance to safety. In both cases, the jumper, lifted lead or mechanical jumper shall be removed immediately when work is completed or suspended.

- 3. With the exception of B.2 above, jumpers and lifted leads shall not be used to incapacitate a system required to be operable by the Technical Specifications. Jumpers or lifted leads on safety-related systems except as noted in B.2 constitute a system modification and shall be controlled in accordance with PPM 1.4.1.

1.3.9.4 Limitations and Precautions

(See body of procedure)

1.3.9.5 Procedure

A. Controls

- 1. The jumper and lifted lead log shall be maintained by the Shift Manager in the Control Room. This log (example included in this procedure) shall contain the location of all electrical and mechanical jumpers and lifted lead tags in use within the confines of the plant site. An up to date index list similar to Attachment II of jumpers and lifted lead tags presently available for use and their identifying numbers, shall be maintained in the front of the jumper and lifted lead tag log, similar to Attachment I.

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2. There shall be one set of distinctively colored electrical jumpers sequentially numbered for accountability.
3. There shall be one set of distinctively colored lifted lead tags sequentially numbered for accountability.
4. Mechanical jumpers shall be uniquely identified and their storage location identified where applicable.
5. Jumpers which are installed between cabinets or are of a length that both ends are difficult to identify shall have the identifying tag attached to both ends.
6. Electrical jumpers and lifted lead tags shall be maintained under the control of the Shift Manager and shall be accounted for once per day per PPM 1.3.6. A daily inventory of mechanical jumpers is not required.
7. The installation of jumpers and or the lifting of leads shall only be accomplished with the permission of the Shift Manager.
8. Jumpers and lifted lead tags shall not be permitted to exist in plant systems any longer than reasonably necessary.
9. The Technical Manager shall have the jumper/lifted lead log reviewed at least quarterly and reported by memo to the Plant Manager. This review is intended to identify those items which should be removed or processed per PPM 1.4.1, Plant Modifications.
10. Any time a jumper or lifted lead tag is lost or removed from service for any reason, the number of that jumper or lifted lead tag shall be permanently retired from the log index.
11. Lifted leads shall be suitably insulated from other circuits and from ground and jumpers must be compatible for the use intended (e.g., size, terminal type, insulation).
12. Independent verification or functional test shall be made for the selected location and the physical installation or removal of jumpers and lifted leads on safety-related or fire protection systems.

B. Installation of Electrical Jumpers

**CAUTION:** Use care when installing jumpers in potentially energized circuits.

1. When the installation of a jumper(s) is required for testing or maintenance, the responsible individual shall enter the following information in the jumper and lifted lead log:

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- a. The panel or instrument rack in which the jumper(s) is to be installed (column 2).
  - b. The specific terminal numbers on which the jumper(s) is to be placed (column 3).
  - c. The specific reason for installing the jumper(s) and function affected (column 4).
  - d. The name of the person requesting the jumper(s) (column 5).
  - e. The date that the jumper(s) is to be installed (column 6).
2. The responsible individual shall then submit the jumper(s) information to the Shift Manager for his approval.
  3. On approval the Shift Manager shall then issue to the responsible individual the jumper(s).
  4. The Shift Manager shall then enter the jumper(s) (column 1) and his initials (column 7) in the jumper and lifted lead log.
  5. The responsible individual shall inform the Control Room Operator just prior to installing the jumper(s).
  6. The Shift Manager shall direct an independent verification of the circuit modification for safety-related or fire protection systems and the individual shall also initial column 7 of the log sheet.
  7. Upon completion of the subject testing or maintenance, the responsible individual shall inform the Control Room Operator just prior to removal, then remove and return the jumper(s) to the Shift Manager.
  8. Upon receipt of the jumper, the Shift Manager shall:
    - a. Assure the system or components has been returned to a normal status.
    - b. Direct that the jumper be returned to its proper storage location.
    - c. Designate a second individual to independently verify the system or component has been returned to normal for safety-related or fire protection systems and initial column 9 of the log sheet.
    - d. Enter the date (column 8) and his initials (column 9) in the jumper and lifted lead log.

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

C. Installation of Lifted Lead Tags

1. When it becomes necessary for any termination to be broken for the purpose of testing or repair maintenance, the responsible individual shall enter the following information in the jumper and lifted lead log.
  - a. The panel or instrument rack in which the lifted lead tag(s) is to be installed (column 2).
  - b. The specific terminal number(s) of the lead(s) that is to be lifted (column 3).
  - c. The specific reason for lifting the lead(s) and function affected (column 4).
  - d. The name of the person requesting the lifted lead tag(s) (column 5).
  - e. The date that the lead(s) are to be lifted (column 6).
2. The responsible individual shall then submit the lifted lead(s) information to the Shift Manager for his approval.
3. On approval, the Shift Manager shall then issue to the responsible individual the lifted lead tag(s).
4. The Shift Manager shall then enter the lifted lead tag(s) number (column 1) and his initials (column 7) in the jumper and lifted lead log.
5. The responsible individual shall inform the Control Room Operator just prior to lifting the leads.
6. The Shift Manager shall direct an independent verification of the circuit modification for safety-related or fire protection systems and that column 7 of the log sheet is initialled by the second verifier.
7. Upon completion of the subject testing or maintenance, the responsible individual shall inform the Control Room Operator just prior to reinstallation, then reinstall the leads and return the lifted lead tag(s) to the Shift Manager.
8. Upon receipt of the lifted lead tag(s), the Shift Manager shall:
  - a. Assure the system or component has been returned to a normal status.

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- b. Direct that the lifted lead tag(s) be returned to its proper storage location.
- c. Designate a second individual to independently verify that the system or component has been returned to normal for safety-related or fire protection systems and initial column 9 of the log sheet.
- d. Enter the date (column 8) and his initials (column 9) in the jumper and lifted lead log.

D. Installation of Mechanical Jumpers

1. When the installation of a mechanical jumper (such as hose, temporary pipe, blind flanges, pipe caps or plugs, etc. which could affect the operability of the system) is required for plant testing maintenance or operation, the responsible individual shall enter the following information in the jumper and lifted lead log:
  - a. The location in which the mechanical jumper is to be installed (column 2).
  - b. The plant system in which the jumper is to be installed and the nearest isolation valve on both ends of the jumper (column 3).
  - c. The specific reason for installing the mechanical jumper (column 4).
  - d. The name of the person requesting the mechanical jumper (column 5).
  - e. The date the mechanical jumper is to be installed (column 6).
2. The responsible individual shall then submit the mechanical jumper information to the Shift Manager for his approval.
3. On approval the Shift Manager shall record his initials in the jumper and lifted lead log (column 7) and the mechanical jumper number or description (column 1).
4. The responsible individual shall inform the Control Room Operator just prior to installing the mechanical jumper.

NOTE: Under no circumstances shall a mechanical jumper be permitted to violate primary or secondary containment integrity when required by the Technical Specifications.

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5. The Shift Manager shall direct an independent verification of the mechanical jumper for safety-related or fire protection systems and that column 7 of the log sheet is initialed by the second verifier.
6. Upon completion of the plant testing, maintenance or operation for which the mechanical jumper was required, the responsible individual shall inform the Control Room Operator just prior to removal, then remove the mechanical jumper and return the system to a normal status.
7. The responsible individual shall then report the system status to the Shift Manager.
8. Upon receipt of this information, the Shift Manager shall:
  - a. Assure the system or component has been returned to a normal status.
  - b. Designate a second individual to independently verify the mechanical jumper has been properly removed for safety-related or fire protection systems and that the individual initials column 9 of the log.
  - c. Enter the date (column 8) and his initials (column 9) in the jumper and lifted lead log.

1.3.9.6 Documentation

When a page in the jumper and lifted lead log has been completely filled out and each entry has been restored or cleared, the completed page shall be removed in accordance with the 1.6 Series of the PPM's.

1.3.9.7 Attachments

- A. Attachment I, Jumper and Lifted Lead Log
- B. Attachment II, Jumper and Lifted Lead Index

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# JUMPER AND LIFTED LEAD LOG

(1) Jumper and Lifted Lead Tag	(2) Location	(3) Terminal Numbers (To-From)	(4) Reason and Func- tion Affected	(5) Issued To	(6) Date Install.	Installation		Removal	
						(7) Independent Verifier Shift Mgr.	(8) Date Clear	(9) Independent Verifier Shift Mgr.	

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Jumper(s)#	Length Size	Lifted Lead Tag(s)#	Mechanical Jumper	
			Number/ Descrip	Function

Attachment II

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