

07-241-91

NIAGARA MOHAWK POWER CORPORATION
NINE MILE POINT NUCLEAR STATION
ADMINISTRATIVE PROCEDURE

AP-4.2

REVISION 03

CONTROL OF EQUIPMENT MARKUPS

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FOR INFORMATION ONLY

THIS REVISION IS A GENERAL REWRITE

THIS PROCEDURE SUPERSEDES NI-ODI-5.06

Effective Date: 1/14/91

NOT TO BE USED AFTER JANUARY 1993
SUBJECT TO PERIODIC REVIEW

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1.0 PURPOSE
(NCTS 1,11)

To establish administrative controls for equipment markups to maintain configuration control and personnel, equipment, and reactor safety by preventing unauthorized operation. This procedure incorporates the Niagara Mohawk Accident Prevention Rules, Section 9, Markup.

1.1 Applicability

This procedure applies to personnel requesting, authorizing, applying, removing, or working under the authority of equipment markups.

1.2 Exclusions

1.2.1 Markup men are excluded from the qualification requirements of being task qualified until 6 months following the Revision 03 effective date of this procedure.

1.2.2 Except for the Meteorological Tower and Sewage Treatment Plant, areas outside the protected area are excluded from the requirements of this procedure.

1.2.3 Markups/Holdouts issued before the Revision 03 effective date of this procedure are excluded from the additional requirements of this revision concerning development, application, and issue.

2.0 REFERENCES AND COMMITMENTS

2.1 Licensee Documentation

Unit 1 and 2 Technical Specifications, Section 3.0/4.0, Limiting Conditions for Operation and Surveillance Requirements

2.2 Standards, Regulations, and Codes

2.2.1 ANSI/ANS-3.2-1982, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants, Section 5.2.6, Equipment Control

2.2.2 INPO 85-017, Guidelines for the Conduct of Operations at Nuclear Power Stations

2.2.3 29CFR1910, Occupational Safety and Health Standards

2.3 Policies, Programs, and Procedures

2.3.1 N1-PM-Q2, Periodic Review of Red and Blue Markups

2.3.2 N2-PM-W2, Weekly Review of Red and Blue Markups and Equipment Holdouts

2.4 Supplemental References

- 2.4.1 Niagara Mohawk Accident Prevention Rules, Section 9, Markup
- 2.4.2 Niagara Mohawk Accident Prevention Rules, Section 5, Stations
- 2.4.3 QA Audit Observation #89017-RG/IN-16, Periodic Review of Station Markups

2.5 Commitments

<u>Sequence Number</u>	<u>NCTS Number</u>	<u>Description</u>
1	502685-00	Incorporate APR into AP-4.2.
2	503504-00	Use markup for configuration control.
3	503467-03	Markup requests shall include a plant impact statement before being submitted to Control Room.
4	700054-53	Provide guidance in Site Administrative Procedures for component sequencing during markups.
5	503363-01	Requirement for two technical reviews on markups.
6	501008-03	Violation of Technical Specifications as a result of removing diesel generator fan from service due to personnel error. Include information on blue markup about component operability.
7	503148-07	Control Room Operators are informed when markups are released for work.
8	503436-01	Fire detector system additions to existing markups need to be routed through Fire Chief. Controller documents notifications to Fire Chief.
9	503634-01	Clarify the use of personal tags.
10	503633-01	Address the use of personal tags for maintenance.
11	001069-01	Revise AP-4.2 to incorporate ODI's and cancel ODI's

3.0 DEFINITIONS

3.1 Blue Markup (APR 900.14)

A Blue Markup is one which permits switches or valves which have been tagged in the "Protective Position" to be operated in order to make electrical or other tests which are required, or desirable, before completion of the work. Such switches or valves must not be operated by anyone except the Markup man or, at his specific request, by another. Such operation must be in accordance with authority received from the Controller.

High voltages such as Kenetron, Davenport, Doble, Biddle Fault Finder, etc., shall be applied under Blue Markup.

No Blue Markup shall be issued that includes any section already covered by an outstanding Red markup, Blue Markup, or a Hold-Out nor shall any Red Markup be issued that includes any section already covered by a Blue Markup.

3.2 Controller (APR 900.08)

The person responsible for issuing a markup on particular circuits or equipment as identified on the Controller Map (Attachment 1). The Controller may delegate certain tasks to another licensed Reactor Operator.

<u>Area</u>	<u>Controller</u>
Unit 1	Unit 1 CSO
Unit 2	Unit 2 CSO

3.3 Hold-Out (APR 900.07)

A Hold-Out means that all persons are prohibited from operating switches or valves which would, if operated, energize a circuit or equipment which is not fit or available for service.

The purpose of the Hold-Out is to protect the system against the hazards of energizing defective or incomplete circuits or equipment and to protect all persons against the hazards which might result. A Hold-Out in itself does not permit anyone to work on the circuits or equipment so covered.

If work is required on circuits or equipment covered by a Hold-Out, a Red Markup may be issued on the same circuits or equipment without clearing the Hold-Out.

Switches or valves tagged under a Hold-Out shall not be operated until the Hold-Out is cleared by the Controller responsible for it. Each switch or valve which isolates the circuit or equipment is to be marked by Hold-Out tags bearing all information for which space is provided.

3.4 Independent Verification

Where a person knowledgeable of the specific action or condition being verified, and qualified to the appropriate level as if the verifier were performing the action, reads the requirement and verifies the action or condition against written requirements. The integrity of the independent verification is maintained by minimizing interaction between the performer and verifier. Physical separation of the individuals is not required.

3.5 Mark Clear (APR 900.05)

A report from the Markup Man informing the Controller of completion of work and termination of the markup.

3.6 Markup (APR 900.02)

The permission given by the Controller to the Markup Man to begin work after taking necessary precautions. Thereafter, the markup continues to exist until the Markup Man marks clear.

3.7 Markup Man

The person that receives a markup from the Controller permitting the person to work, or direct work, on specific circuits or equipment. Only NMPC personnel listed on departmental listings of QUALIFIED MARKUP MEN are allowed to be assigned as Markup Men.

A Qualified Markup Man has demonstrated the ability or has been evaluated as having the ability to independently perform assigned tasks with an awareness of the effect of the tasks on the safe operation of the station.

3.8 Personal Tagging

A method of tagging where the control, application, and clearance/removal of tags is performed by the person conducting work. Personal tagging is independent of an established and reviewed markup system and is without the direction of a Markup Man/Controller.

3.9 Personnel

A generic term referring to both station personnel and external organization personnel.

3.10 Plant Impact

The affects on the plant as a result of the equipment impact in accordance with Technical Specifications, FSAR/USAR, etc.

3.11 Protective Position (APR 900.12)

A switch or valve is in the protective position when the switch or valve protects personnel working on equipment. The protection is normally afforded in two ways:

3.11.1 By preventing the application of voltage, flow of liquids or gases, etc.; AND

3.11.2 By removing voltage, liquids, etc., to which the equipment is inherently subjected, as in the cases of grounding switches, open drain valves, open vents, etc.

NOTE: The protective position may be the open or closed position as determined by the function of the switch or valve.

3.12 Red Markup (APR 900.03)

Switches or valves necessary for protection have been placed in the "Protective Position" and marked with red markup tags. Personnel are prohibited from operating switches or valves under a red markup.

3.13 Reference Tag

A tag used on remote control devices, remote indications or removed fuses to indicate the presence of a Markup or Holdout on associated equipment or circuits.

3.14 Reissue

The transfer of a Surrendered Markup and its assignment to another Markup Man. Reissue of a Markup transfers responsibilities from the original Markup Man to the new Markup Man. Under some circumstances the markup may be reissued to the original Markup Man.

3.15 Surrender

Permission from the Controller to the Markup Man to be relieved of further work and responsibility in connection with a Markup and may be used for transfer of the Markup. It differs from "Mark Clear" in that it definitely implies the work is unfinished, that tags cannot be removed, that the circuit may still be grounded, and that the circuit or equipment cannot be restored to service.

3.16 Task Qualified

Personnel designated in writing:

- Adequately trained on the requirements of this procedure.
- Having sufficient knowledge of equipment to verify protection.
- Having demonstrated the ability to read prints used in preparing markup.

3.17 Testing (ANSI/ANS 3.2-1982)

An element of verification for the determination of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.

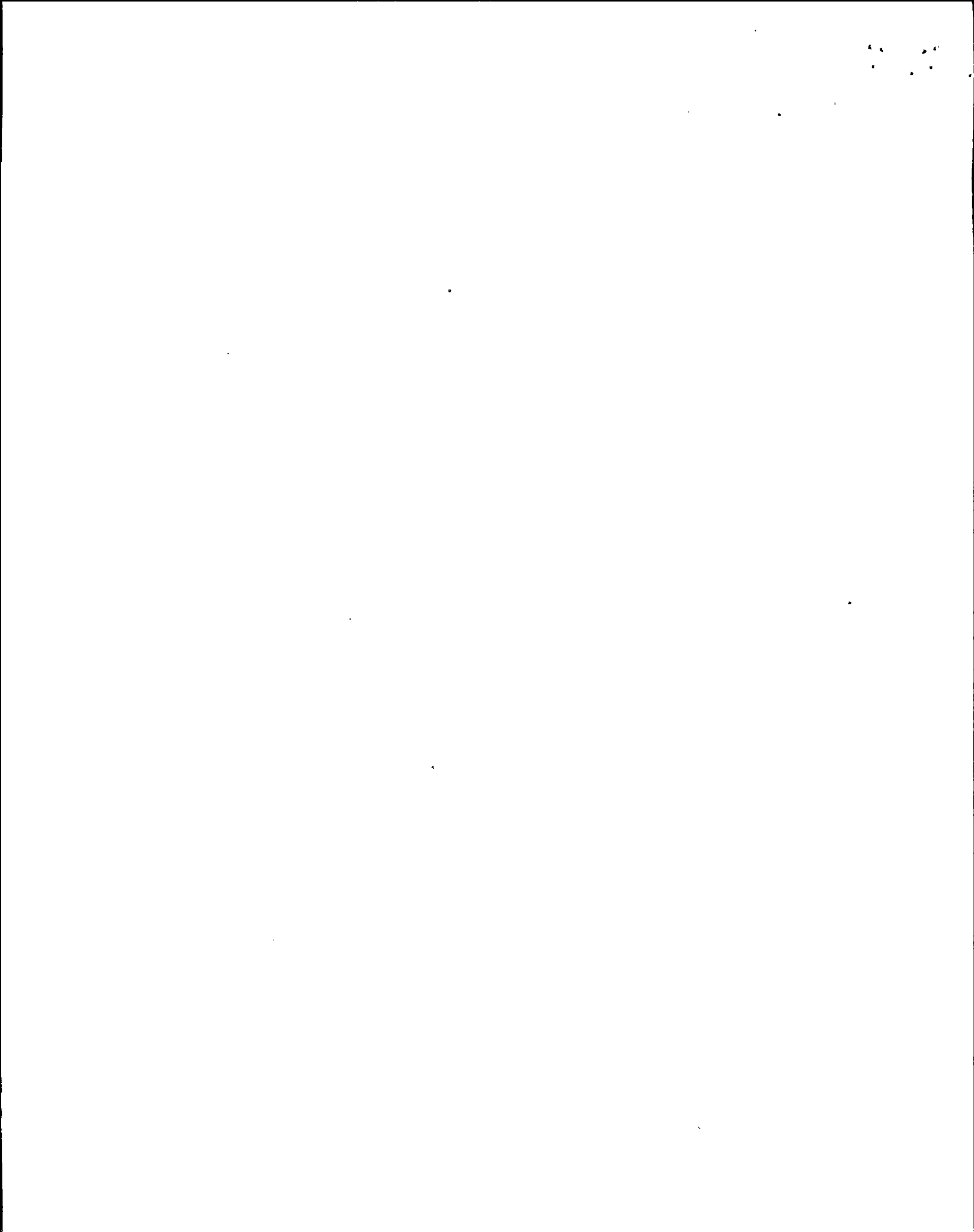
3.18 Work Scope

Work within the identified component boundary necessary to complete the described activity.

4.0 RESPONSIBILITIES

The following personnel have responsibilities assigned in this procedure:

- General Supervisor Operations
- Station Shift Supervisor (SSS)
- Controller
- Station Operators
- Markup Man
- Department Supervisors
- Fire Chief
- "OTHERS" working under markups.



5.0 PROCEDURE

5.1 General Requirements

5.1.1 General requirements for Blue Markups:

- a. The Markup Man and Controller shall concur with changes to the status of a markup.
- b. Switches or valves tagged with a Blue Markup shall only be operated with permission of the Markup Man. The Markup Man may request others to operate switches or valves. All Operation shall be in accordance with authority received from the Controller. (APR 900.04)
- c. When a markup is required, personnel shall use a Blue Markup on components to be tested or required to support testing (surveillance test, preventive maintenance, or post maintenance tests).

NOTE: Certain PM procedures which require the state of a component to be changed are considered to be part of testing.

- d. The Station Shift Supervisor, with concurrence from the Markup Man, may allow minor maintenance or minor parts replacements under a blue markup or may direct the clearance of the blue markup and application of a red markup to perform the maintenance/replacement.
- e. Components under a Blue Markup shall NOT be repositioned except during testing or in support of testing or as specifically authorized by the General Supervisor Operations.
- f. The Markup Man shall ensure components are returned to the protective position when testing is aborted or completed, unless the markup is to be marked clear immediately.
- g. If testing is anticipated to be interrupted for greater than 24 hours, the Markup Man should ensure components are returned to the protected position.
- h. High voltages such as Kenetron, Davenport, Doble, Biddle Fault Finder, etc., shall be applied under blue markup. (APR 900.04)
- i. A Blue Markup shall NOT be issued that includes any section already covered by an outstanding Red or Blue Markup or a Holdout. (APR 900.04)

5.1.1 (Cont)

- j. Only one Blue Tag shall be attached at any one point. (APR 900.16)
- k. "OTHERS" shall NOT work under a Blue Markup.
- l. Before beginning work, the Markup Man shall walk down and verify equipment status.
- m. Before operation/testing under blue markup, a qualified operator (assigned by the Controller) and the Markup Man shall field verify against the markup sheet that components required to support the operation/testing within the markup boundary are in the proper configuration.

NOTE: The Markup "protective position" and the required operation/testing position may be different.

5.1.2 General requirements for Red Markups:

- a. The Markup Man and Controller shall concur with changes to the status of a markup.
- b. A Red Markup shall NOT be issued that includes any section already covered by a Blue Markup. (APR 900.04)
- c. Several Red Tags may be attached at the same point. (APR 900.14)
- d. A component tagged with a Red Tag shall NOT be operated at any time. (APR 900.14)
- e. Verifying C.T. Ratios, Meggering and Phase Tracing Signals may be performed under a Red Markup. (APR 900.03)
- f. Contractors may be added as "OTHERS" under a Red Markup. (See Section on "OTHERS") (APR 906.02)

5.1.3 General requirements for Holdouts:

- a. The Controller shall control Holdouts.
- b. Personnel shall NOT operate components/equipment under a Holdout.
- c. Work shall NOT be performed under a Holdout. Work may be performed under a Red Markup on components/equipment covered under a Holdout without clearing the Holdout. (APR 900.07)

5.1.3 (Cont)

- d. Holdouts may be used for Configuration Control where personnel protection is not required.

5.1.4 General requirements for the Markup Man:

- a. Department Supervisors shall select Markup Men ensuring the individuals are:
 - 1. Task qualified to serve as Markup Men.
 - 2. Employees of Niagara Mohawk Power Corporation
- b. The Markup Man should be the work leader, or the supervisor directly responsible for the work and workers for the job described in the "NATURE (DESCRIPTION) OF WORK" section of the markup.
- c. The General Supervisor Operations shall maintain a list of qualified markup personnel.
- d. Department Supervisors shall provide an updated list of qualified Markup Men to the SSS on a quarterly basis.

5.1.5 General Requirements For Independent Verification/Review

- a. When conducting an independent review of a proposed markup/holdout, the Independent Reviewer shall ensure:

- Isolation boundaries are proper for the present plant configuration as well as personnel protection, if applicable.

(NCTS 4)

- Sequence of application is correct.
- Method of application is correct and annotated.
- Circuit numbers, valve numbers, switch numbers, fuse numbers, etc. have been correctly transcribed onto the markup/holdout sheet and the tags.
- Markup/holdout number has been correctly transcribed onto the tags.
- The markup/holdout does not compromise the operability of other required equipment.

5.1.5 (Cont)

- b. For markups/holdouts applied to Safety-Related Equipment, a licensed Reactor Operator shall apply/remove OR perform the independent verification of the markup/holdout and document verification on the appropriate markup/holdout-sheet.
- c. The controller shall assign an independent verifier, knowledgeable of the specific action or condition to be verified, and qualified to the appropriate level as if the verifier were performing the action.
- d. The performer and verifier should maintain physical separation and minimize interaction.
- e. The independent verifier shall read the requirements and verify the action or condition against the written markup/holdout requirement.
- f. The Independent Verifier shall complete an independent verification of the markup/holdout application/removal ensuring:
 - 1. Components are checked for alignment in accordance with the markup/holdout.
 - 2. Markup/holdout tags are accounted for and have been properly applied/removed.
- g. If high radiation level areas are involved, the SSS may waive independent verification providing:
 - 1. A licensed operator applies/removes the tags.
 - 2. For systems or equipment important to safety, the waiver is documented by sign-off on the appropriate markup/holdout sheet.

5.2 Markup Initiation

NOTE: Personnel performing surveillance tests, instrument checks, Non Destructive Examination, Hands Off Inspection, or Equipment Operability checks need not obtain markups unless specifically required by the controlling procedure or when personal protection is required.

- 5.2.1 The SSS or CSO may waive completion of a request for Prearranged Outage of Equipment.

(NCTS 2) 5.2.2 Personnel performing operations affecting system configuration not within the scope of an operation, surveillance, or special test procedure shall initiate a holdout to control system configuration.

5.2.3 When initiating a request for a markup, the Markup Man or Department Planning Personnel shall complete a Request for Prearranged Outage of Equipment including:

- (NCTS 3)
- a. A plant impact statement provided from an approved procedure or an approved Work-In-Progress (WIP) Sheet
 - b. Applicable reference documents necessary to assist in verification of the markup boundaries
 - c. Markup man's phone extension
 - d. Identification of equipment to be worked
 - e. Description of work
 - f. Work document number, if applicable
 - g. Name of requester
 - h. Name of Markup Man
 - i. Name(s) of "OTHERS" to work under markup, if known
 - j. Valves/devices to be markup up
 - k. Identification of freeze seals to be tagged
 - l. Description of valves/devices to be marked up
 - m. Location of grounds
 - n. Unit Number (1 or 2)
 - o. Time markup is desired and expected job duration
- (NCTS 6)
- p. If applicable, a copy of the Work Request (WR) or WIP Sheet
 - q. A detailed description of the Preventive Maintenance (PM) or work to be performed

NOTE: A preventive maintenance or surveillance test procedure number is not an adequate description of work.

5.2.4 Unless waived, the originator shall submit the Request for Prearranged Outage of Equipment to operations personnel.

5.3 Markup Development

5.3.1 The Controller, or a Licensed Reactor Operator (RO) under the general direction of the Controller, shall:

- a. If required, request assistance in reviewing the proposed markup.
- b. Develop a markup including as a minimum:

- Identification of equipment to be worked
- Description of work
- Work document number, if applicable
- Name of markup requestor
- Name of Markup Man
- Names of "OTHERS" to work under markup, if known
- Valves/devices to be marked up
- Identification of freeze seals to be tagged
- Description of valves/devices to be marked up
- Protective position of valves/devices
- Location of grounds

(NCTS 4)

- Sequence of application (order markup must be applied)
- Reference tags required
- Markup number
- Unit number (1 or 2)
- Additional notes or comments concerning the markup, if applicable

NOTE: Either computer generated forms or forms from the Accident Prevention Rules Book may be used.

- c. When planning work on equipment under a markup that does not involve exposing of electrical circuits, and grounds are not to be applied, ensure the markup states: "FOR WORK ON EQUIPMENT NOT INVOLVING THE EXPOSING OF ELECTRICAL CIRCUITS, GROUNDS ARE NOT NEEDED."

5.3.1 (Cont)

- d. Prepare required tags for the markup including on the tags:
- Markup No.
 - Tagged for
 - Controller
 - Station
 - Switch or Valve No.
 - Protective Position
- e. Initial the appropriate form as markup writer.
- f. Attach the Request for Prearranged Outage of Equipment to the Markup.

5.3.2 (NCTS 5) The Controller shall submit the proposed markup for independent review to:

- a. A licensed Reactor Operator/Senior Reactor Operator other than the markup writer; OR
- b. For markups prepared for radwaste systems or components, a CRO or ROC; OR
- c. For markups prepared for security components or systems, the Security I&C Chief Technician; OR
- d. For markups prepared for Fire Protection components or systems, the Fire Chief.

5.3.3 The Independent Reviewer shall:

- a. Conduct an independent review of the proposed markup.
- b. If required, request assistance in reviewing the proposed markup from personnel other than the originator or previous reviewers of the markup.
- c. Initial the appropriate form as an Independent Reviewer.

5.4 Markup Approval

5.4.1 The Controller shall:

- a. Ensure no conditions exist precluding the implementation of the markup.
- b. Verify the degree of protection required to perform the work, the availability of necessary backups, and the existing lineup of related systems that may be affected.
- c. Understand the scope of work and the plant impact associated with the application of the markup.
- d. Send the markup to the SSS or Assistant Station Shift Supervisor (ASSS) for review and approval.

5.4.2 The SSS/ASSS shall:

- a. Evaluate impact or restrictions on plant operation, Technical Specifications, FSAR, and other administrative conditions.
- b. Verify the markup has had proper review.
- c. If the markup requires an Equipment Status Log (ESL) entry, record the markup number in the ESL and ensure the ESL index number is recorded on the markup sheet.
- d. If a system, structure, or component identified in Technical Specifications is to be made inoperable due to the placement of a markup:

(NCTS 6)

NOTE: A marked up system or equipment is considered inoperable and subject to applicable Technical Specification limitations.

1. Review the applicable Limiting Conditions for Operation and Surveillance Requirements (Technical Specification Sections 3.0 and 4.0, respectively.)
 2. Review and understand plant impacts.
 3. Ensure required actions or tests are performed before applying the markup.
- e. Approve the markup by initialing the appropriate markup form.
 - f. Return markup to the Controller for application.

5.5 Markup Application

5.5.1 The Controller shall direct application of the markup.

5.5.2 When directing application of a markup, the Controller shall:

- a. Ensure the markup is properly completed.
- b. Ensure no condition exists which will prevent application of the proposed Markup (APR 901.03a).
- c. Initial the TAGS PLACED BY ORDER OF section on the markup form.
- d. Assign a person to perform application of the markup and discuss with the person plant impacts, precautions or limitations of markup application and special monitoring requirements.
- e. For Safety-Related systems or components, assign a person to perform an Independent Verification of the markup application.

5.5.3 The person assigned to apply the markup shall:

- a. Ensure understanding of the purpose of the markup and conditions that should be established when the markup is applied.
- b. Ensure the markup is approved for application.
- c. Use a copy of the appropriate Markup form to align components and place tags in the specified sequence.
- d. Have the section of the circuit or equipment involved isolated from all known sources of energy by placing all necessary switches or valves in the Protective Position (or checked as being in the Protective Position). (APR 901.03b)
- e. Have all switches or valves necessary to secure the above isolation marked with tags bearing all information for which spaces are provided. (APR 901.03c)
- f. When permanent instruments are available, have the instruments read as a check on the isolation of the circuit against electrical energy, mechanical motion, flow of liquids, gases, etc. (APR 901.03d)

5.5.3 (Cont)

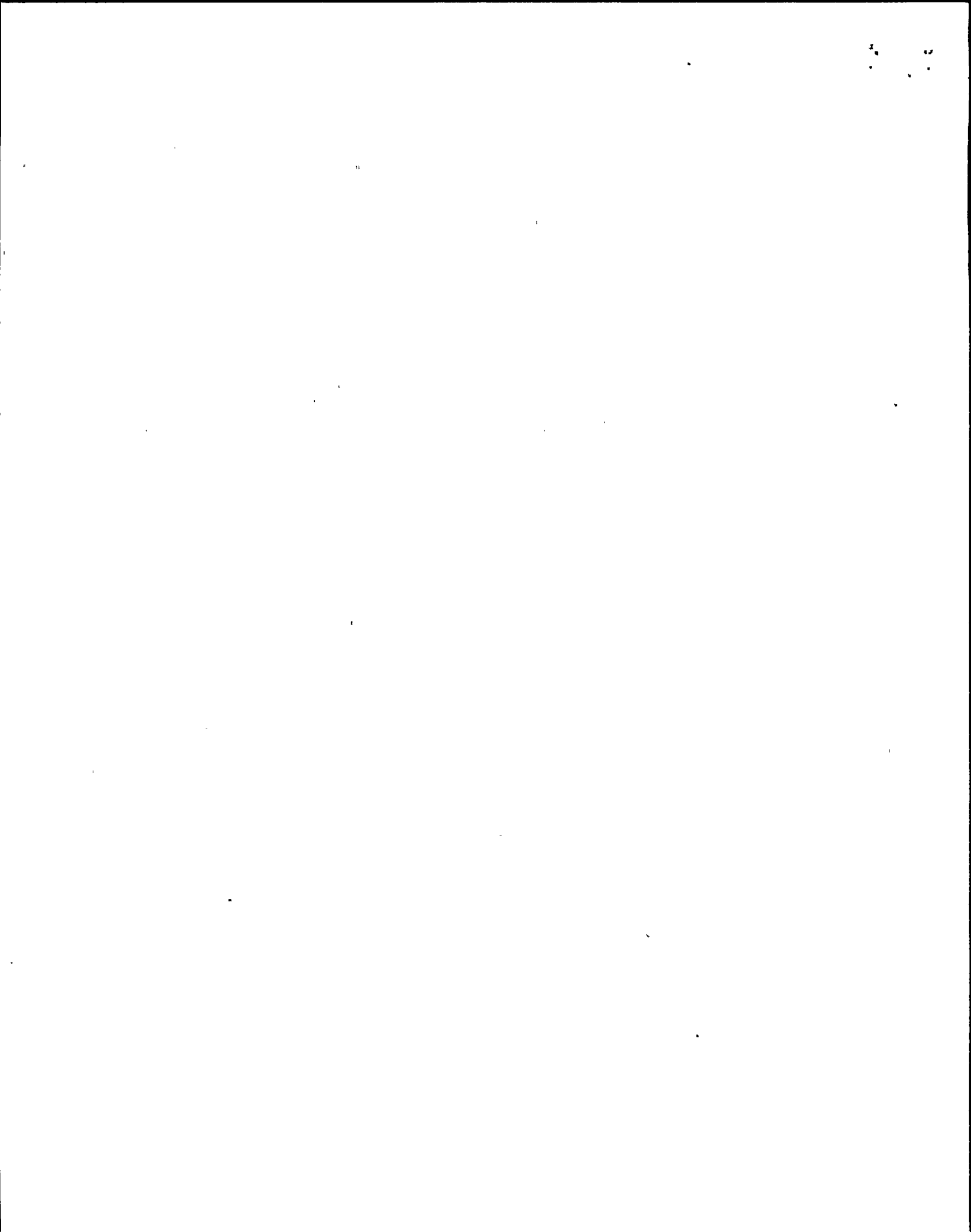
- g. Where grounding switches or drainage valves are permanently installed on lines or equipment included on the Request for Prearranged Outage of Equipment, after first ascertaining by test that the lines or equipment are de-energized shall, at this time, but never before this time, have grounding switches or drainage valves placed in the Protective Position and tagged. (APR 901.03f)
- h. When applying markups to fuses, store each fuse in a designated storage area with the associated markup tag or reference tag.
- i. Ensure portable or permanent grounds specified on the Request for Prearranged Outage of Equipment applied before the Markup being issued or portable grounds requested by the Markup man from the Controller after the markup is issued, are included on the appropriate markup form and tagged. (APR 901.05)
- j. Ensure reference tags are applied.
- k. When tags have been applied, initial, date and time the appropriate markup form(s) certifying the components are in the protective position.

5.5.4 The Independent Verifier shall:

- a. Conduct an independent verification of the markup application.
- b. Initial, date and time the appropriate markup forms.

5.5.5 Before issuance of the markup, if a component requires cycling or other actuation to provide protection, personnel shall:

- a. Obtain permission from the CSO and SSS.
- b. Remove tag from the component.
- c. Reposition the component as necessary.
- d. When the component is returned to the as marked up position, replace the original markup tag on the component.
- e. For Safety-Related systems or components, conduct an independent verification of the application.



5.5.5 (Cont)

- f. If the markup form had already been signed/initialed by a person originally applying the tag:
 - 1. Line out the original protective positive line on the markup form, and note the reason for lineout.
 - 2. Add a new line on the form to document returning the component to the required position including the initials of the person returning the component to the markup position and person performing independent verification.

5.6 Markup Issuance

(NCTS 7) 5.6.1 The Controller shall:

- a. Review the markup and ensure the markup has been properly applied and documented.
- b. If the markup is replacing an existing blue markup, verify the original markup is cleared before application of tags and issuance of the new Markup.
- c. Issue the markup to the markup man specified on the markup form and markup tags stating:
 - 1. Piece of equipment involved.
 - 2. Locations of switches or valves for which tags have been placed.
 - 3. If it is a Red or Blue Markup and Markup number.
- d. Initial, date and time the markup form.
- e. Enter the markup number and time of issue in the appropriate Controller Log.
- f. Maintain the markup book.

5.6.2 The Markup Man shall:

- a. Obtain a copy of the markup.
- b. Walk down the markup, verifying protection.

5.6.3 If requested by the Markup Man, Operations personnel shall provide assistance in walking down the markup.

- 5.6.4 If discrepancies are discovered, the Markup Man shall:
- a. Stop markup or work activities.
 - b. Notify the Controller of discrepancies.
 - c. Resolve discrepancies before resuming markup or work activities.

- 5.6.5 Following markup issuance, the Markup Man shall:
- a. Maintain responsibility for the performance or direction of work within the scope of the markup.
 - b. Maintain positive control over assigned markups to ensure the safety of personnel performing work.

5.7 Tag Additions/Removals to Markups

- 5.7.1 The Controller may add additional tags to an existing applied markup provided:
- a. The Markup Man for existing markup concurs with the addition.
 - b. SSS concurs with addition.
 - c. An addition of tags to an existing Blue Markup does not involve a work scope change.
- 5.7.2 Personnel shall process tag additions to markups in accordance with Section 5.3 and the applicable steps in Sections 5.4 and 5.5 of this procedure.
- 5.7.3 Except as provided in APR 906.04 for boundary extensions, personnel shall NOT remove/clear individual tags on an issued markup without clearance of entire markup.

5.8 Markup Surrender/Reissue

- 5.8.1 A Markup Man may surrender a markup for timely reissue to a new Markup Man.
- 5.8.2 If a markup is surrendered and not immediately reissued, the Controller shall maintain the surrendered markup in a separate file from issued markups.
- 5.8.3 When surrendering a markup:
- a. The Markup Man shall inform the Controller of the condition of the circuit or equipment and status of work.

10

5.8.3 (Cont)

- b. For a Blue Markup, the Markup Man and Controller shall ensure the existing condition of components is identified on the markup form.
- c. The Markup Man or Controller shall sign, date and time the markup form in the surrender section and note component status.

5.8.4 If the Markup Man is NOT on site and cannot be contacted, before surrender is performed, the responsible supervisor shall:

- a. Walkdown the markup and verify condition of the circuit or equipment and status of work.
- b. Take full responsibility for the markup and assume duties as Markup Man.
- c. Ensure the original Markup Man is informed of the surrender immediately upon return to work. (Example: Note placed on original Markup Man's security badge.)

5.8.5 If the Markup Man cannot be contacted AND the responsible supervisor is not on site, personnel shall NOT surrender the markup.

5.8.6 To request reissue of an existing markup when the Work Scope changes, the new Markup Man shall complete a Request for Prearranged Outage of Equipment.

5.8.7 To reissue a markup to a qualified Markup Man, the Controller shall:

- a. Verify the Work Scope remains the same

OR

Verify the Request for Prearranged Outage of Equipment adequately covers the Work Scope change.

- b. Issue the markup to the Markup Man stating:
 - 1. Name of the equipment involved.
 - 2. Locations of switches or valves for which tags have been applied.
 - 3. If it is Red or Blue Markup and the markup number.

5.8.7 (Cont)

- c. Enter the new Markup Man's name on the markup form.
- d. Initial, date and time the markup form.

5.8.8 The new Markup Man shall:

- a. Obtain a copy of the markup.
- b. Walkdown the markup verifying protection.

5.9 "OTHERS" on Red Markups

5.9.1 Personnel working on the same job (in lieu of a surrender/reissue) or a different job provided protection is adequate, may sign on a Red Markup as "OTHERS" working under the Markup.

5.9.2 "OTHERS" desiring work under an existing markup shall:

- a. If the request involves a change in work scope as identified in the "Nature of Work" section of the markup, complete a Request for Prearranged Outage of Equipment.
- b. Meet the same qualification requirements as Markup Man except being an NMPC employee.
- c. Obtain consent from the assigned Markup Man.
- d. Obtain consent from the Controller.
- e. If the Markup Man cannot be contacted or denies permission for "OTHERS" to work under the existing markup, initiate a new markup for the work.

5.9.3 The Markup Man shall give permission directly to the Controller and identify the "OTHER" to work under the markup.

5.9.4 The Markup Man, Controller, and SSS shall ensure the markup provides the necessary protection for the additional work.

5.9.5 "OTHERS" shall personally sign in on the appropriate markup form providing:

- a. Time/date
- b. Work document number
- c. Nature of work

- 5.9.6 The Controller shall:
- a. Initial the entry of the "OTHER" on the markup form.
 - b. Inform the "OTHER" of:
 1. Equipment involved under the markup.
 2. The location of switches or valves for which tags have been placed.
 3. Markup number.
- 5.9.7 The "OTHER" shall:
- a. Obtain a copy of the markup.
 - b. Walkdown the markup verifying protection.
 - c. Maintain responsibility for the safety of the personnel working under the direction of the "OTHER".
(See APR 906.02d7)
- 5.9.8 The Markup Man shall maintain responsibility for the safety of personnel working under the direction of the Markup Man. (See APR 906.02d7)
- 5.9.9 Before signing clear, the "OTHER" shall:
- a. Ensure workmen are clear from the circuit or component.
 - b. Notify the Markup Man and Controller:
 1. Work is completed, OR;
 2. The responsibility for the work has been transferred to another person signed on as "OTHER" OR;
 3. The remaining work to be completed is covered under a different markup.
 - c. Or the Controller for the "OTHER" shall sign clear on the appropriate markup form.
- 5.9.10 If the "OTHER" is NOT on site and cannot be contacted, before clearance, the responsible supervisor shall:
- a. Walkdown the markup and verify condition of the circuit or equipment and status of work.

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5.9.10 (Cont)

- b. Take full responsibility for the OTHER on the markup and assume duties as "OTHER".
- c. Ensure the original "OTHER" is informed of the clearance immediately upon return to work. (Example: Note placed on original "OTHERS" security badge.)

5.10 Markup Clearance/Restoration

5.10.1 If the Markup Man cannot be contacted, before clearance, personnel shall surrender and reissue the markup to a new Markup Man in accordance with the Markup Surrender/Reissue section of this procedure.

5.10.2 The Markup Man shall:

- a. Before clearing a markup, ensure no condition exists precluding clearance of the markup.
- b. Mark clear of the markups as follows:
 - 1. Clear workmen from the circuit or equipment.
 - 2. Ensure "OTHERS" working under the markup are "Marked Clear".

NOTE: The component or system should now be considered energized.

3. Report to the Controller stating:

- completion of work OR changes in work scope require new markup
- markup type and number
- changes or repairs made
- for Blue Markup, status of each component on the markup

4. Or the Controller for the markup man shall sign, date, and the time the markup sheet.

5.10.3 The Controller shall:

- a. Before restoring the markup, ensure the status of the equipment and the system is accurately known and proper.

5.10.3 (Cont)

- b. After verifying conditions permit, and the Markup Man has marked clear, verify system and plant conditions are proper for restoration to normal lineup per operating procedures, if applicable.
- (NCTS 4) c. Specify the restoration position and sequence on the markup form.
- d. If the component or system is not to be returned to the OP line-up as applicable, prepare a Yellow Holdout to place on the component or system.
- e. Initial the markup form authorizing restoration.
- f. Assign a person to perform clearance of the markup and discuss with the person plant impacts, precautions or limitations of markup restoration and special monitoring requirements.
- g. For Safety-Related systems or components, assign a person to perform an independent verification of the markup restoration.

5.10.4 The qualified operator assigned to remove the tags shall:

- a. If the markup in place was for work that breached the system, walk down the system to ensure system integrity.
- b. Remove tags.
- c. Align equipment as required by the markup sheet and apply required Holdout Tags necessary for configuration control.
- d. Verify alignment of equipment by using component indicators (status lights, annunciators, position indicator lights, etc.).
- e. Remove applicable reference tags associated with the markup.
- f. Initial appropriate markup form signifying associated markup and reference tags are removed.
- g. Submit markup to the Controller.

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- 5.10.5 For Safety-Related systems or components the assigned Independent Verifier shall:
 - a. Conduct an independent verification of markup restoration.
 - b. Initial, date and time the appropriate markup forms.
- 5.10.6 When the markup is restored and tags removed, the Controller shall enter the markup number and time in the appropriate Controller log.
- 5.10.7 If an ESL entry is associated with the markup, the Controller shall notify the SSS/ASSS the markup is cleared and the associated equipment or system is restored.
- 5.10.8 The SSS/ASSS shall clear the markup from the ESL, if applicable.
- 5.10.9 (NCTS 6) Upon removing a markup from a system, structure, or component identified in Technical Specifications, the SSS, or designee, shall:
 - a. Review the applicable Limiting Conditions for Operation and Surveillance Requirements (Technical Specification Sections 3.0 and 4.0, respectively).
 - b. Review applicable Post-Maintenance Testing (PMT) requirements.
 - c. Before declaring the system, structure, or component operable, ensure required actions and tests are performed.

5.11 Additional Requirements for Fire Detection/Suppression System Markups

- 5.11.1 The Markup Man shall submit a Request for Prearranged Outage of Equipment to the Fire Chief.
- (NCTS 8) 5.11.2 If a fire detection/suppression system needs to be added to an existing markup, the Markup Man shall submit a separate Request for Prearranged Outage of Equipment to the Fire Chief.
- 5.11.3 After Fire Chief approval, the Markup Man shall submit the request to the Controller for the completion of:
 - a. Markup Sheets and tags for Fire Suppression Systems.
 - b. Yellow Holdout forms and tags for Fire Detection Systems.

5.13 Holdout Development

5.13.1 The Controller, or a Licensed Reactor Operator (RO) under the general direction of the Controller, shall;

a. Develop a holdout using forms that include as a minimum:

- Identification of equipment to be tagged.
- ESL number, if applicable
- Work document number, if applicable
- Name of holdout requestor
- Reason for holdout
- Estimated time or date of release
- Valves/devices to be tagged
- Description of valves/devices to tagged
- Protective position of valves/devices
- Sequence of application of holdout tags
- Reference tags required
- Holdout number
- Unit number (1 or 2)
- Additional notes or comments concerning the holdout, if applicable

(NCTS 4)

NOTE: Either computer generated forms or forms from the Accident Prevention Rules Book may be used.

b. Prepare required tags for the holdout including:

- Holdout No.
- Tagged for
- Controller
- Station
- Switch (or valve) No.
- Protective Position

5.13.1 (Cont)

- c. Indicate CSO in box labeled "Controller"
- d. Initial appropriate form in box labeled "Name"
- e. Attach the Request for Prearranged Outage of Equipment to the holdout:

5.13.2 The Controller shall submit the proposed holdout for independent review to:
(NCTS 5)

- a. A licensed Reactor Operator/Senior Operator other than the holdout writer; OR
- b. For holdouts prepared for radwaste systems or components, a CRO or ROC; OR
- c. For holdouts prepared for security components or systems, the Security I&C Chief Technician; OR
- d. For holdouts prepared for Fire Protection components or systems, the Fire Chief.

5.13.3 The Independent Reviewer shall:

- a. Conduct an independent review of the proposed holdout.
- b. If required, request assistance in reviewing the proposed holdout from personnel other than the originator or previous reviewers of the holdout.
- c. Initial the appropriate form as an Independent Reviewer.

5.14 Holdout Approval

5.14.1 The Controller shall:

- a. Ensure no conditions exist precluding the application of the holdout.
- b. Verify the availability of necessary backups, and the existing lineup of related systems that may be affected.
- c. Understand the scope of the work and the plant impact associated with the application of the holdout.
- d. Notify the SSS of the pending holdout application.

5.14.2 The SSS/ASSS shall:

- a. Evaluate impact or restrictions on plant operation, Technical Specifications, FSAR, and other administrative conditions.
- b. Verify the holdout has had proper review.
- c. If the holdout requires an Equipment Status Log (ESL) entry, record the holdout number in the ESL and ESL index number is recorded on the holdout form.
- d. If a system, structure, or component identified in Technical Specifications is to be made inoperable due to the placement of a holdout:

NOTE: A system or equipment under a holdout is considered inoperable and subject to applicable Technical Specification limitations.

1. Review the applicable Limiting Conditions for Operation and Surveillance Requirements (Technical Specification Sections 3.0 and 4.0 respectively.)
 2. Review and understand plant impacts.
 3. Ensure required actions or tests are performed before applying the holdout.
- e. Authorize placement of the holdout.

5.14.3 The Controller shall direct application of the holdout.

5.14.4 When directing application of a holdout, the Controller shall:

- a. Ensure the holdout is properly completed.
- b. Ensure no condition exists which will prevent application of the proposed holdout (APR 901.03a).
- c. Initial the BY ORDER OF section on the holdout form.
- d. Assign a person to perform application of the holdout and discuss with the person plant impacts, precautions or limitations of holdout application and special monitoring requirements.
- e. For Safety-Related systems or components, assign a person to perform an Independent Verification of the holdout application.

- 5.14.5 The person assigned to apply the holdout shall:
- a. Ensure understanding of the purpose of the holdout and conditions that should be established when the holdout is applied.
 - b. Use a copy of the appropriate holdout form to align components and place tags in the specified sequence.
 - c. Have switches or valves marked with properly completed tags.
 - d. When applying holdouts to fuses, store each fuse in a designated storage area with the associated tag or reference tag.
 - e. Ensure reference tags are applied.
 - f. When tags have been applied, initial, date and time the appropriate holdout form(s) certifying the components are in the required position.

5.14.6 For Safety-Related systems or components the Independent Verifier shall:

- a. Conduct an independent verification of the holdout application.
- b. Initial, date and time the appropriate holdout form(s).

5.14.7 The Controller shall notify the SSS that the holdout has been applied.

5.15 Tag Additions/Removals to Holdouts

- 5.15.1 The Controller may add additional tags to an existing holdout provided the SSS concurs with addition.
- 5.15.2 Personnel shall process tag additions to holdouts in accordance with Sections 5.12 through 5.14 of this procedure.
- 5.15.3 Personnel may release individual tags on a holdout without release of the entire holdout provided:
- a. The SSS authorizes release.
 - b. The reason for release is noted on the holdout form.

5.16 Holdout Release/Restoration

- 5.16.1 When conditions allow equipment to be returned to service, the SSS shall direct the Controller to release the holdout and restore the system to desired lineup.

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5.16.2 The Controller shall:

- a. Before releasing the holdout, ensure the status of the equipment and the system is accurately known and proper.
- b. After verifying conditions permit, verify system and plant conditions are proper for restoration for return to desired lineup.
- c. Specify the restoration position and sequence on the markup form.
- d. Initial, date and time the release on the holdout form.
- e. Note the reason or conditions of release on the holdout form.
- f. Assign a person to perform restoration of the holdout and discuss with the person plant impacts, precautions or limitations of holdout restoration, and special monitoring requirements.
- g. For Safety-Related systems or components, assign a person to perform an independent verification of the holdout restoration.

5.16.3 The qualified operator assigned to remove the tags shall:

- a. Remove tags.
- b. Align equipment as required by the holdout sheet.
- c. Verify alignment of equipment by using component indicators (status lights, annunciators, position indicator lights, etc.).
- d. Remove applicable reference tags associated with the holdout.
- e. Initial appropriate holdout form signifying associated reference tags are removed.
- f. Submit the holdout to the Controller.

5.16.4 For Safety-Related systems or components the assigned Independent Verifier shall:

- a. Conduct and independent verification of holdout restoration.
- b. Initial, date and time the appropriate holdout form.

- 5.16.5 When the holdout is released and tags removed, the Controller shall enter the holdout number and time in the appropriate Controller log.
- 5.16.6 If an ESL entry is associated with the holdout, the Controller shall notify the SSS/ASSS the holdout is released and the associated equipment or system is restored.
- 5.16.7 The SSS/ASSS shall clear the holdout from the ESL, if applicable.
- 5.16.8 Upon removing a holdout from a system, structure, or component identified in Technical Specifications, the SSS, or designee, shall:
- a. Review the applicable Limiting Conditions for Operation and Surveillance Requirements (Technical Specification Sections 3.0 and 4.0, respectively).
 - b. Review applicable Post-Maintenance Testing (PMT) requirements.
 - c. Before declaring the system, structure, or component operable, ensure required actions and tests are performed.

5.17 Personal Tagging

(NCTS 9, Except as defined in the Exclusions Section, Personnel shall not use 10) "Personal Tagging" at Nine Mile Point Site.

6.0 RECORD REVIEW AND DISPOSITION

- 6.1 The General Supervisor Operations, or designee, shall perform periodic reviews of Markups in accordance with the following:
- a. Unit 1, N1-PM-Q2, Periodic Review of Red and Blue Markups.
 - b. Unit 2, N2-PM-W2, Weekly Review of Red and Blue Markups and Equipment Holdouts.
- 6.2 Personnel shall ensure the following records are retained in accordance with AP-10.1, Management of Station Records:
- Markup forms

ATTACHMENT 1
CONTROLLER MAP

