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C-A OPERATIONS PROCEDURES MANUAL

15.3.3.2 Siemens Operator, Siemens Transformer Yard Inspection

(Booster/AGS Ring Power Supply Systems Group Procedure EPS-S-002)

Note: This document was formerly a C-A Group Procedure. The content of the group procedure was reviewed by the Technical Supervisor. All approvals and/or issue dates of the original group procedure are maintained for present use.

Text Pages 2 through 4

Attachments

Hand Processed Changes

<u>HPC No.</u>	<u>Date</u>	<u>Page Nos.</u>	<u>Initials</u>
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Approved: _____ *Signature on File* _____
Collider-Accelerator Department Chairman Date

M. Bannon

15.3.3.2 Siemens Operator Siemens Transformer Yard Inspection

1. Procedure

- 1.1 This procedure provides instructions to Booster! AGS Ring Power Systems Group Siemens Operator to perform the inspections of the phase shifting transformers in the Building 928 South Transformer Yard. Specifically it describes the general process to perform the inspection, how to record the inspection results and who to inform if an unexpected condition or unexpected parameter exists. The checks include visual inspection for any signs of oil leakage, possible oil over temperature problems and for the proper nitrogen pressure at the top of the oil in transformers to prevent moisture from entering the tank.

2. Responsibility

- 2.1 Watch standers performing these inspections shall be knowledgeable with the requirements of this procedure, the proper use of any required PPE and understand the details of the inspection process for each transformer yard.
- 2.2 If an unexpected condition or parameter is found at a transformer yard, the assigned inspector shall immediately inform the Siemens Operations Supervisor or designee.
- 2.3 The Siemens Operations Supervisor or designee shall be responsible to maintain this procedure and current with each transformer yard "as-built" conditions.

3. Prerequisites

- 3.1 Watch standers assigned to perform this transformer yard inspection shall be knowledgeable with this procedure, electrical safe working practices and the proper use of PPE.

4. Precautions

- 4.1 Substations are normally energized while inspections are performed. Adhere to all postings and wear proper PPE while performing inspections.
 - 4.1.1 Inspections of transformer yards with exposed live parts shall not be performed within the fenced areas when it is raining.
- 4.2 The inspector is responsible to ensure that the substation gates are fully locked at the completion of the inspection and the substation key is controlled.

5. Procedure

- 5.1 Obtain transformer yard key.
- 5.2 Read all postings at substation and comply with them.

- 5.3 In general, maintaining the maximum distances when inside the transformer yard fenced area will ensure safety from electrical or arc flash hazards.

NOTE:

No PPE is required to perform the transformer yard inspections and nitrogen cylinder change outs specified in this procedure.

DANGER:

Entrance into the transformer yard is strictly for inspection of the transformer as covered in this procedure. Under no circumstances shall you approach any covered cables, exposed bus or go anywhere close to the tops of the transformers while they are energized.

A TRANSFORMER THAT IS NOT LOCKED OUT/TAGGED OUT SHALL BE CONSIDERED ENERGIZED

- 5.4 Once a month on or about the last Friday of the month, the Day-Shift Siemens Operator shall conduct this inspection as follows:

- 5.4.1 Check for any oil leaks on:

5.4.1.1 Concrete slabs and gravel surrounding the transformers at each transformer yard.

5.4.1.2 All plumbing joints, couplings and valves.

5.4.1.3 Any indication of oil leakage shall be noted on the "Siemens Transformer Yard Inspection Sheet" (Attachment 1) and immediately inform the Siemens Operator Supervisor of the leak to allow corrective actions.

5.4.1.4 If the leak is significant, or if any evidence of oil on soil, call BNL Fire/Rescue at x2222 or x911 for immediate response, and notify the C-AD ECR, C-AD Environmental Coordinator, or the C-AD Power Distribution Group Leader, and the Siemens Operator Supervisor.

NOTE:

Station I Transformer Oil levels are read inside the fenced area while Station II Transformer Oil Levels are read outside the fencing on the east side.

- 5.4.2 When possible, check the oil levels of each transformer and compare them to each other. If anyone either has a lower oil level than the rest, notify the Siemens Operator Supervisor for further investigation.
- 5.5 Immediately inform Siemens Operations Supervisor of any unexpected conditions or parameters.

5.6 Fill out the "Siemens Transformer Yard Inspection Sheet" (Attachment 1) after completion and place it in the Transformer Yard Inspection Book located in the Siemens Control Room.

6. Documentation

6.1 Completed Siemens Transformer Yard Inspection Sheets.

7. References

7.1 NFP A 70B, Recommended Practice for Electrical Equipment Maintenance.

8. Attachments

None

Attachment 1

SIEMENS TRANSFORMER YARD INSPECTION SHEET

1. DATE OF INSPECTION: _____
2. INSPECTION DONE BY: _____
3. STATE OF AGS MMPS: ON [] OFF []
4. WEATHER CONDITIONS: _____
5. INSPECTION DONE FROM INSIDE YARD [] OUTSIDE YARD [] BOTH []
6. ANY SIGNS OF OIL ON GRAVEL: NO [] YES []
IF YES SUPERVISOR NOTIFIED []

COMMENTS: _____

7. OIL LEVEL IN TRANSFORMER
- | | |
|---------------|-------------|
| STA I F BANK | LEVEL _____ |
| STA I P BANK | LEVEL _____ |
| STA II F BANK | LEVEL _____ |
| STA II P BANK | LEVEL _____ |