SWITCHING AND CLEARANCE PROCEDURE

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1. Definitions

CORE Approved Personal Protective (PP) Grounds – Grounds must be constructed of soft drawn copper conductor covered with a protective thermoplastic or elastomer jacket. Clamps must meet or exceed CORE available fault currents. All clamp to cable connections must have a compression closed end ferrule that matches the conductor rating. All personal protective grounds must be inspected and tested on an annual basis.

Authorized Personnel – Qualified CORE employees who complete switching and the lock out/tag out of equipment in order to perform work on that equipment. Authorized Personnel are selected CORE employees who have been trained on CORE's switching and clearance procedures.

BES-(Bulk Electric System) As defined by the Regional Reliability Organization, the electrical generation resources, transmission lines, interconnections with neighboring systems, and associated equipment, generally operated at 100 kV or higher. Radial transmission facilities serving only load with one transmission source are generally not included in this definition.

Clearance – A formal statement, with documentation, from the System Operator stating that a defined section of line or piece of equipment has been cleared from Energy Sources and will not be re-energized until the System Operator verifies all personnel to be in the clear.

Clearance Point - The physical location at which the Energy Isolating Device is visually open.

Control Center - The location from which system monitoring and switching functions are directed.

Dead Line Order – A formal statement, with documentation, from the System Operator stating that a specific device is in the open position and will not be closed until the System Operator has verified all personnel to be in the clear.

Disabled - A relay or line recloser that is out of service.

Distribution – CORE lines and equipment rated at 34.5kv (phase to phase) or less.

Do Not Operate Tag - A prominent warning device, and a means of attachment, which can be securely fastened to an Energy Isolating Device in accordance with an established procedure to indicate that the Energy-Isolating Device and the equipment being controlled may not be operated until the Tagout Device is removed. A “Do Not Operate” tag shall be applied to switching devices that will be clearance points and/or to reclosers when automatic reclosing is disabled. “Do Not Operate” tags will not be removed until work is complete and the Qualified Personnel are ready to release the Clearance. “Do Not Operate” tags will be applied by the person or persons performing the work on the lines or equipment. A “Do Not Operate” tag shall have the following information noted on it:

- Switchman’s name
- Date
- Procedure number
- Switchman’s phone number

Electronic Tag – A tag applied within the SCADA or Outage Management System by the System Operator.

Enabled - A relay or line recloser that is in service.

Energized - Connected to an Energy Source or containing residual or stored energy.

Energy Source - Any source for electrical, mechanical, hydraulic, pneumatic, chemical, thermal or other energy.

Energy Isolating Device - Any device that breaks the flow of electrical energy.

General Switching Procedure – Switching procedure issued for system rearrangement, load relief, or isolation of damaged equipment. Clearances or Dead Line Orders may be issued on General Switching Procedures.

Hot Work – Work within the minimum approach distance (MAD) on energized lines or equipment above 600 volts. Hot Work will only be performed when using an insulated aerial device such as a bucket truck or a baker board. However, work within the MAD may be performed off of hooks as long as no contact is made with any energized part or conductor, and any energized part or conductor is insulated from the Qualified Personnel by using cover up and the appropriate personal protective equipment. Work within the MAD requires a Non Reclose Order. All work within the MAD requires at least two Qualified Personnel. If the Qualified Person can position him/herself so that no part

of their body, or conductive object being held by him/her can come into contact with an energized part or conductor, accidental or deliberate, a Non Reclose Order is not required. The Qualified Person shall determine when a Non Reclose Order is required for hot stick work where no employee will be within the MAD.

Hot Line Tag – Selectable relay setting available on most electronic reclosers. In addition to being non-reclosing, Hot Line Tag is more sensitive and will operate in less time for most faults.

Lockout - The placement of a Lockout Device on an Energy Isolating Device in accordance with an established procedure, ensuring that the Energy-Isolating Device and the equipment being controlled cannot be operated until the Lockout Device is removed.

Lockout Device - A device that utilizes a positive means such as a lock—either key or combination type—to hold an Energy-Isolating Device in the safe position and prevent the energizing of equipment.

Independent Switching Permit - This Switching Permit Procedure provides the System Operator the ability to give jurisdiction of a circuit to the Qualified Personnel who will be performing multiple tasks on that circuit or working in an area without cell phone or radio service. The Switching Permit allows the Qualified Personnel to isolate any segment within the switching order without continuous contact with the System Operator.

Minimum Approach Distance – The closest distance a Qualified Person is permitted to approach either an energized or a grounded object, as applicable for the work method being used.

Non-Reclose Order – The procedure used when automatic reclosing of any device is Disabled or blocked, normally for the purpose of Hot Work.

Notice Tag - A tag with the word “NOTICE” written in blue letters. The Notice tag will be used as an information tag only. It shall be used to indicate an abnormal situation on a section of line or piece of equipment and will be applied to all devices changed from their normal position. Qualified Personnel may remove a Notice Tag with the permission of the System Operator. Notice Tags will be assigned a procedure number by the System Operator. The Notice Tag shall have the following information noted on it:

- Switchman’s name
- Date

- Procedure Number
- Switchman's phone number
  * On underground systems, "Notice" tags will be placed on the handle or door of the device.

Procedure Holder – Qualified Personnel who receive a procedure from the System Operator.

Procedure Owner - System Operator

Personal Protection Devices– Personal Protection devices such as grounds and "Do Not Operate" Tags will be applied according to this procedure. Personal Protection Devices will be applied by the person or persons performing the work on the lines or equipment.

Qualified Personnel - Persons familiar with construction, the operation of equipment, and the hazards involved. Qualified Personnel have the skills and the techniques to distinguish live parts from other parts of electric equipment. Qualified Personnel can determine the nominal voltage of exposed live parts and can maintain the minimum approach distances specified for the voltages on which they will be working. Qualified Personnel may perform switching with the permission of a CORE System Operator and include both CORE employees and contractors.

Relay Procedure – The procedure used for the System Operator to log relay work.

Source of Power (SOP) – Prefix added to a procedure performed for/by an outside entity.

Special Condition Procedure – Allows for Notice tags with a procedure number to be applied to equipment that is damaged, de-rated, or otherwise not in its normal condition.

System Operator - The CORE employee that is responsible for the safe and reliable operation of the CORE transmission and distribution systems. The System Operator normally monitors and operates the transmission and distribution systems from the Control Center.

Tagout - The placement of a "Do Not Operate" tag on an energy-isolating device in accordance this procedure to indicate that the energy-isolating device and the equipment being controlled may not be operated until the tagout device is removed.

Three Part Communication - A communication method where the initial order or instruction is issued, the receiving party repeats the order or instruction back, and the original issuing party acknowledges the order or instruction was received correctly.

Transmission – CORE lines and equipment rated 44kv (phase to phase) and above.

Visual Open – An Energy Isolating Device that allows the Qualified Person to see that electrical continuity is broken. A Visual Open shall have an air gap of at least 1" per 1000 volts. Switchgear breakers that have been opened, racked out, and tagged shall be considered visually open.

2. Acronyms

BES – Bulk Electric System
CORE – CORE Electric Cooperative
GOAB – Gang Operated Air Break
NERC – North American Electric Reliability Corporation
SOP – Source of Power
SPP – Southwest Power Pool
PPE – Personal Protective Equipment
RC – Reliability Coordinator

3. Interpretations

The stated interpretations for the following words shall be applied throughout this procedure:

"Must" – Mandatory
"Shall" – Mandatory
"Will" – Mandatory
"May" – Permissive Choice
"Should" – Advisory
"Identify" - The circuit and/or equipment being worked.
"Isolate" – Open, with a visible air gap from all known sources of energy.
"Test" – Verify live or de-energized conditions.

"Ground" – Application of personal protective grounds for the purpose of protecting employees.
"Check phasing" – Check for difference of potential between switching points.

4. Purpose

The purpose of this switching procedure is to establish coordinated and consistent clearance and switching procedures for the safe and reliable operation and maintenance of those power systems for which CORE is responsible.

5. Introduction

The Switching and Clearance Procedure outlines the process for normal and emergency switching, communication protocol, and placement of locks and tags. This Procedure will be reviewed yearly to assure that the guides and procedures herein are adequate for the safe and reliable operation and maintenance of power systems, including meeting the NERC requirements. Proposed revisions and/or additions can be submitted for consideration at any time.

6. Applicability

The Switching and Clearance Procedure is applicable to any person involved with switching or lockout/tagout of CORE Transmission and Distribution systems including:

- Authorized Personnel
- Qualified Personnel
- System Operator

This procedure shall be applicable to all CORE Distribution and Transmission equipment that has been or can be energized by operation of any Energy Isolating Device. All provisions of the Switching and Clearance Procedure shall be followed on equipment under construction unless isolated from any Energy Isolating Device. Examples of isolation include:

A. Jumpers removed or not constructed.
B. Underground cable not terminated within enclosure.
C. Jumpers or cable terminator not bolted to disconnect.

7. Communications

As procedures are implemented, it is essential that personnel identify themselves to each other when beginning any communications.

A. Conversations must be clear, concise, and conducted in a businesslike manner. Precise communication is critical to safety.
B. Personnel must exchange information using proper line and equipment terminology so that all parties have a clear understanding of the work to be performed.
C. Communications for all BES switching will be via a cell phone or a landline.
D. Switching orders are communicated using three-part communications as follows:
    1. System Operator orders operation to be performed.
    2. Qualified Personnel repeat operation to be performed back to the System Operator.
    3. System Operator verifies read back was correct.
    4. Then, and only then, may the Qualified Personnel perform the operation.
    5. When the order is complete, the Qualified Personnel report operation accomplished.
    6. System Operator repeats operation accomplished back to Qualified Personnel.
    7. Qualified Personnel verify read back correct

8. Locks and Tags

A “Notice” tag shall be applied to any switching device that is changed from its normal state and will be removed when the switching device is restored to its normal position. A “Do Not Operate” tag shall be applied to switching devices that will be clearance points and to reclosers when automatic reclosing is disabled. “Do Not Operate” tags will not be removed until work is complete and the Qualified Personnel are ready to release the Clearance. When possible, locks will be placed in addition to a “Do Not Operate” Tag on equipment used to de-energize circuits or equipment on which work is to be performed. “Do Not Operate” tags will be applied by the Qualified Personnel who will be performing

the work. Equipment that was not designed to accept locks must be tagged out of service.

- This can only be done when you can demonstrate that tagging will provide an equivalent means of safety.
- Equivalent means of safety can be removal of an isolating circuit element (cut-out door), opening of an extra disconnecting device, or blocking a controlling switch.

A. If more than one procedure is issued on the same piece of equipment or line segment, a set of tags will be placed for each procedure.
B. All tags shall be considered the same as a Lockout Device and will not be removed without orders from the System Operator.
C. On overhead systems, the tags shall be fastened to the base of the pole, at eye level, and in the most conspicuous location so that others can easily read these tags.
D. On air-break switches, the tag shall be tied on the switch Lockout Device.
E. On reclosers in substations, the tags shall be attached to the operating handles of all open reclosers on the circuits that have crews working on them. Reclosers with control panels shall have the tag affixed to the control panel switch.
F. In substations with inside switchboards, the tag will be affixed to the operating handle located on the switchboard control panel, as well as to the operating switches or handles located on the device.
G. Do Not Operate or Notice tags for General Switching, Independent Switching Permits, or Dead Line Orders require the procedure number, the device number, the date of application, and the Qualified Personnel's name and phone number.
H. Do Not Operate tags for Non Reclose Orders require the date, and the Procedure Holders name and phone number.
I. Electronic tags will be used to indicate the abnormal state of a device modeled in SCADA or OMS. Electronic Tags may be considered sufficient for a SCADA operated device on a Non-Reclose or Dead Line Order but never for a Clearance Point.

9. Switching Procedures

All switching shall be performed by Qualified Personnel. No switching is to be performed without the authorization of the System Operator. Distribution General Switching and Independent Switching Procedures require 72 hours advance notice to allow the System Operators time to evaluate, write and approve switching. Transmission General Switching procedures must also be coordinated with the SPP RC and must be

submitted at least 21 calendar days before the planned start of the outage. Transmission switching involving any Xcel Energy equipment will need to be requested 30 calendar days before the start of work to allow coordination with Xcel. Non-reclose orders require no advance notice. Tree trimming contractors are not authorized or Qualified Personnel and shall submit a request for a procedure at least 72 hours prior to the planned start of the trimming. CORE personnel will perform all procedures and apply all protection for tree trimming contractors when requested. All switching must abide by CORE's Switching and Clearance Procedure. All communication between System Operator and Qualified Personnel during switching will be by three-part communication.

9.1 General Switching - Switching performed for line sectionalizing, system rearrangement, isolation of damaged equipment, and/or changes in operating conditions. General switching requires "Notice" Tags.

9.1.1 Clearances – Clearances are added to a General Switching Procedure. A Clearance will be requested from the System Operator when work is to be performed on a de-energized, grounded section of line or equipment. Clearances require Do Not Operate Tags. Clearances will only be issued to the person or persons doing the work. When a Clearance is issued, the System Operator will provide a formal statement with documentation declaring that the section of conductor or equipment to be worked on has been de-energized and isolated from any and all energy sources. The procedure holder shall explain the limits and boundaries of the clearance to any personnel working under that clearance. Grounds shall not be applied by CORE for a contractor or an outside entity. Additional crews may take a Clearance on an existing procedure by notifiying the System Operator and applying their own "Do Not Operate" tags to all Clearance Points needed.

A SOP (source of power) prefix (SOP-Clearance) will be used with a Clearance to or from an outside entity.

9.1.2 Dead Line Orders – Dead Line Orders are added to a General Switching Procedure. A Dead Line Order will be requested from the System Operator when work is to be

performed on a de-energized section of line or equipment without visual opens or a Clearance. A Dead Line Order shall be considered Hot Work and grounds are not allowed. Do Not Operate tags are required at the Energy Isolating Device but not at normal opens or alternate sources. Electronic tags are permissible at SCADA controlled devices.

9.2 Non-Reclose Order - A formal statement, with documentation, issued by the System Operator that automatic reclosing features are disabled, and that the equipment or line(s) covered by the Non-Reclose Order will not be re-energized following a relay operation without communication with the holder of the Non-Reclose Order. The automatic reclosing feature will not be returned to the automatic mode until the Non-Reclose Order has been released. Non-Reclose Orders will be used when performing Hot Work or when enabling the Arc Flash feature of a substation. If the nearest upstream device has an electronic feature for Hot Line Tag, that feature will be used. An SOP (source of power) will be issued or received in conjunction with a Non-Reclose Order to or from an outside entity. Non-Reclose Orders should be returned to the System Operator at the end of each work day. Non-Reclose Orders require Do Not Operate Tags.

9.3 Independent Switching Permit - The Independent Switching Permit is a transfer of switching authority from the System Operator to the Qualified Personnel completing work on a circuit. Independent Switching may be used in areas with limited cell phone or radio coverage and at other times when it is not feasible or necessary to be in constant communication with the System Operator. CORE approved switching and grounding procedures remain in effect. The Qualified Personnel must contact the System Operator at the beginning and the end of each work day to document the transfer of authority at which time the Qualified Personnel and the System Operator must agree on the system condition.. Do Not Operate Tags shall be applied and all clearance points recorded by the Independent Switching Procedure Holder. The System Operator will NOT issue a Clearance on Independent Switching.

CORE System Operator will:

1) Receive the request from the Qualified Personnel for Independent Switching. The request must state the details of the work to be done and the locations involved.
2) Research the feasibility of granting the request. No Independent Switching will be issued if there are substation ties or other abnormal conditions.
3) Write the Independent Switching order if granted. If not granted write a General Switching Procedure.
4) Provide the order and verify the correctness with the Qualified Personnel.
5) Grant the Switching on the circuit to the Qualified Personnel.
6) Record system status in the log book as reported by the Qualified Personnel (open points).
7) Place electronic tags in OMS at all sources of energy into the work area
8) Ensure contact with the Qualified Personnel each day prior to beginning work and review the status of the circuit (initiated by the switchman).
9) Receive the return of the Independent Switching order when all work is completed.

Qualified Personnel Shall:

1) Submit the request to the Control Center for Independent Switching with adequate lead time (72 hours) and details of the work and locations involved.
2) Receive the Switching procedure and verify the correctness with the System Operator.
3) Before beginning work each day, the Qualified Personnel will contact the System Operator and provide the procedure number they would like to work.
4) After arriving at the work site, the Qualified Personnel will:
    - Close the normally open device (if appropriate) and apply a “Notice” tag.
    - Isolate the section of line or equipment by opening the source devices. Establish visual opens and tag them with Do Not Operate tags that include the procedure number
    - Apply “Do Not Operate” tags to any alternate fuses or switching points feeding in to the work area described on the Independent Switching.

- Test for de-energized and ground/isolate using an approved method.

5) At the completion of the work day, remove “Do Not Operate” tags if possible and apply notice tags to any device not in its normal position. Notify the System Operator of any temporary “normal open” positions.
6) Notify System Operator when all work is complete and the Independent Switching Procedure can be closed.

9.4 Special Condition - Procedure used to indicate that a piece of equipment has an operating problem, is temporarily out of service, or general notes about the equipment. Special Condition requires a Notice Tag.

9.5 Relay - Procedure used when relay work is being performed and to remind the System Operator that alarms are due to the specific procedure. Restoration of a relay will be recorded on the procedure form. Relay requires no tags.

10. Outage Restoration

Outage restoration must always be carried out in an efficient manner with public and employee safety being of paramount importance. A top down approach shall be applied to the extent possible, restoring facilities in the following order:

1. Transmission lines
2. Substation
3. Feeders
4. Reclosers
5. Fuse
6. Transformer
7. Meter or individual customer

A. Overhead circuits - Overhead circuits typically employ automatic reclosing and should be patrolled to all downstream devices or until an obvious cause is found before attempting restoration except in unusual circumstances. Unusual circumstances include but are not limited to coordination issues such a blown fuse in conjunction with a circuit trip or devices set to Non Reclose or Hot Line

Tag at the time of tripping. All crews signed on to a Non Reclose order must be contacted before any restoration attempt is made on that device.

B. Underground circuits - Underground circuits may be tested by isolating and energizing if fault finding equipment is not available or not feasible to use. Reclosing (if equipped) must be disabled during this process. On feeders and longer URD circuits the System Operator and Qualified Personnel may agree to test several cable sections at a time in order to reduce troubleshooting and outage time. A specific strategy such as testing half the circuit or testing each direction out of a switch or cubicle can be applied. This must be done with a systematic approach that will result in learning something about the fault location in the event of an additional trip. In the event that the fault is energized during this process the System Operator will return to a one cable section at a time testing process. The intent is to limit the total number of faults in order to minimize equipment damage caused by excessive fault currents.

C. Restoration switching procedures - All switching for outage restoration must follow the requirements of the Switching and Clearance Procedure. A switching procedure is not necessarily required for restoration. On an overhead circuit for example, the Qualified Personnel should alert the System Operator that they have arrived at the outage location, the state (open/closed) of the probable device, and that they will be patrolling the line. A procedure is not required to patrol the line. The Qualified Personnel may leave a pole wrap at the open device if they choose to but shall never consider that to be a Clearance Point until properly issued by the System Operator. If a clearance is not required to clear the fault or if nothing is found, the System Operator will verify that no clearances have been issued on the device and may re-energize or request that the Qualified Personnel re-energize the circuit. For non SCADA controlled devices the Qualified Personnel in the field will verify that no clearance tags are on the device before closing. Should the patrol reveal needed repairs that require a procedure, no work shall take place until a procedure is initiated by the System Operator and or a Clearance(s) is properly issued.

There will be instances when it is beneficial for a switching procedure to be opened and Clearance(s) issued at the start of line patrol. When patrolling line in remote areas with difficult access, the crew may want to have Clearance(s) in place upon finding equipment damage so repairs can begin immediately. Qualified Personnel may request a switching procedure and Clearance(s) when starting a patrol at any time.

11. Emergency Switching

Emergency switching may be performed due to an unscheduled event where time may not allow for a review and approval of a switching form.

A. All emergency switching shall follow the requirements of the Switching and Clearance procedure.
B. Emergency switching may be coordinated by Authorized personnel but shall be under the general direction of the System Operator.
C. Qualified Personnel may perform switching without authorization if the safety of any person is in jeopardy.

12. Verifying De-Energized Conditions

A. The qualified person, when applicable must verify that the equipment or controls cannot be restarted or closed by testing the equipment, controls, or circuits with appropriate testing devices.
B. Testing procedures shall also verify that equipment that is back fed or has induced voltages has indeed been de-energized
    1. The qualified person shall verify any alternate sources of power that could be introduced into the electrical circuit.
    2. The qualified person shall install grounds on all de-energized circuits being worked on unless using a Dead Line Order.
    3. 600 amp T-bodies shall be tested for an absence of voltage and removed from oil/vacuum switchgear prior to grounding, in order to guarantee a visual open. The grounding procedure of all 600 amp T-bodies will be performed using a Load Break Reducing Tap Plug (piggy back) in conjunction with a CORE approved PP ground.
    4. The connection or removal of any electrical device shall be performed using CORE provided PPE.

13. Re-Energizing Equipment

A. The qualified person must perform tests and visual inspections that assure that re-energizing can take place.
    1. Qualified Personnel shall verify that all “Do Not Operate” tags have been removed and confirm with the System Operator that all personnel and equipment are in the clear and that all clearances are released.
    2. If the procedure holder is absent, the System Operator shall make a concerted effort to contact the procedure holder before removing a “Do

Not Operate" tag. If contact with the procedure holder fails, then the procedure holder's supervisor may grant removal of the "Do Not Operate" tag.

3. All electrical jumpers, grounds, shorts, and other devices must be removed before re-energizing.
4. All persons who are affected by the re-energizing shall be informed of any hazards and warned to stay clear of the process.

14. Special Equipment Considerations

A. Voltage Regulators. Operating a bypass switch for a step voltage regulator in any position other than neutral may cause catastrophic failure and has resulted in serious injury and fatalities. Qualified Personnel shall use at least two methods to verify that the neutral position has been achieved prior to bypassing a regulator. One of the two methods used must be a voltage check between the source and load bushings. This voltage check must be performed using a testing device specifically designed for this application. The other method may be any of the following:

1. Neutral light is on
2. Position indicator is in the neutral position
3. Control panel indicates neutral position.

If there is any question regarding the neutral position verification or if the above steps cannot be completed for any reason, the line must be de-energized before the regulator is removed from service.

B. Capacitors. Shunt capacitors operate at full capacity whenever they are energized. Qualified Personnel shall use OCB's (Oil Circuit Breakers) if provided, or a load break tool when disconnecting a capacitor. After disconnecting the capacitor(s), Qualified Personnel shall wait 5 minutes to allow the internal discharge resistor to bleed off the stored charge and then ground or short all capacitor terminals.

15. Substation PCA buildings

CORE completes a study of the Arc Flash hazard present at all substations with indoor switchgear and has verified that relay settings will minimize potential incident energy

incurred by an Arc Flash. In order to maintain the level of exposure indicated by the study, the following conditions must be confirmed and maintained anytime energized parts are exposed, cubicle doors are open, or when personnel are within the PCA pit.

A. Transformer differential must be in service.
B. 12.47kV bus differential must be in service.
C. Exposed or adjacent feeders must be set to Non-Reclose. Hot Line Tag should not be used unless specifically requested by Qualified Personnel.

The use of Non-Reclose settings requires a Non-Reclose order issued by the System Operator.

Non-Reclose for exposed or adjacent feeders shall be **mandatory** for the following types of work:

A. Anytime work is performed in lower feeder cubicle (i.e. phasing, mechanical adjustments, opening shutters, wiring modifications).
B. Anytime outside back door to cubicle is open with load side bus energized.
C. Anytime Qualified Personnel are within the Power Control Assembly (PCA) pit with energized cables. When personnel are in the PCA pit, all feeders shall be set to Non-Reclose.

Qualified Personnel may request Non-Reclose anytime they deem necessary and should consider the advantages/disadvantages of using Non-Reclose settings for the following types of work:

A. Closing paralleling switch between feeders.
B. Racking a breaker out.
C. When the door is open to extract the breaker

No energized exposed work shall ever be performed in the following situations:

A. Substation transformers are paralleled.
B. Transformer differential is out of service.
C. 12.47kV bus differential is out of service.

Switchgear cubicle doors shall remain closed unless Qualified Personnel are working inside the lower cubicle.

16. System Operator Responsibility

A. The System Operator is responsible for authorizing and issuing procedures on all equipment affecting COREs Transmission and Distribution system. The System Operator may delegate this authority to other authorized personnel when necessary and feasible.
B. The System Operator shall issue all procedures on equipment, which requires protection at points distant from each other, such as on Distribution lines, Transmission lines or related substations.
C. The System Operator is responsible for the proper preparation of a correct switching procedure and properly directing the switching and related operations.
D. The System Operator shall confirm that all persons holding a clearance are aware of the conditions and limits of the clearance before work is started. This will be done by confirmation of the points of clearance for the scope of work.
E. Upon completion of the work under a procedure, the System Operator shall have the overall responsibility to confirm all switches and equipment are returned to normal.
F. The System Operator shall determine that all necessary work has been completed; CORE Approved Personal Protective Grounds have been removed, and the personnel and equipment are in the clear and have been notified that the equipment is to be returned to service before proceeding with a switching restoration.

17. Qualified Personnel Responsibility

A. The Qualified Personnel shall verify that all switching blades or contacts are completely open or closed and locked and/or tagged as applies to the switching procedure.
B. The Qualified Personnel shall check the position indicators on circuit breakers to see that they correspond with the System Operator's instructions.
C. The Qualified Personnel shall check all blades for proper position and see that the operating handle is locked when instructions are to "check open" or "check closed" disconnect switches.
D. The Qualified Personnel shall not proceed with a switching procedure and will remain clear of any Energy Source under any of the following conditions:
    1. Does not clearly understand the instruction.
    2. Complete loss of communication with the System Operator.
    3. Believes the instruction is incorrect.

4. At any point in the operations an unexpected relay or breaker action occurs; or
5. Finds a device in a position other than indicated by the System Operator when the instructions were issued.
6. Finds a device that is mislabeled and does not correspond with the instruction or written procedure.

E. Distribution Operations field personnel or approved contractors will be responsible for switching equipment outside of the substation fence.
   a. May also switch Distribution reclosers and associated bypasses and disconnects within the substation.

F. Transmission Operations field personnel will be responsible to switch equipment within the substation fence.
   a. May also switch Transmission equipment outside the substation (44kV or 115kV GOAB's.)

18. Safety Inspector Responsibility

A. Train Qualified Personnel and System Operators in the Switching and Clearance procedure
B. Review the lockout/tagout program for compliance on an annual basis as a minimum.
C. Report observed violations of the Switching and Clearance Procedure to the appropriate supervisor or manager.

19. Lockout/Tagout Procedure

This switching and clearance procedure fulfills the requirements of a lockout/tagout procedure. All equipment with the potential for unexpected start-up during routine adjustment or maintenance is subject to the requirements of this procedure. With this program, all energy sources are completely isolated and locked out prior to the servicing of circuits or equipment. All potential sources of hazardous energy shall be identified prior to working on the subject equipment. This program is established to comply with the requirements of the Occupational Safety and Health Administration (OSHA) Standard 1910.147 and 1910.269 The Control of Hazardous Energy.

20. Employee Training

A. Qualified Personnel shall be trained initially and at least annually thereafter on LOTO per the requirements of 29 CFR 1910.147 and 1910.269
B. Qualified Personnel will receive retraining whenever changes are made to their job classification or a change in job, machines, assignments, and/or energy control procedures occur. Additional retraining will also be conducted when a periodic inspection reveals deviations from or inadequacies in the employee's knowledge or use for the energy control procedures.

21. NERC and Regional Reliability Standard Reference

NERC Reliability Standards:

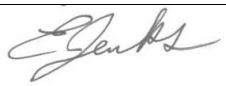
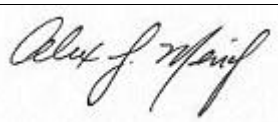
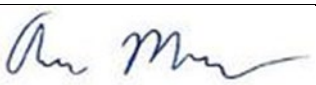
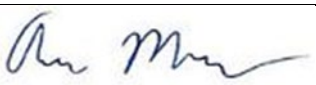
COM-002-4 Communications and Coordination
TOP-001-6 Transmission Operations

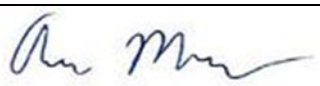
CORE Procedures:
700-8 Communication Procedure

22. Procedure Review and Update Cycle

Review cycle: Annually
Responsibility: Transmission Operations Director, Safety and Health Director

23. Procedure Approvals

	Date	Name	Title
Reviewed	3/9/11		Safety and Risk Management Coordinator
Approved	3/9/11		Manager of Operations
Reviewed	10/4/13		Safety and Risk Management Coordinator
Approved	10/4/13		Director of Transmission Operations
Reviewed	11/3/14		Safety and Risk Management Director
Approved	11/3/14		Transmission Operations Director
Reviewed	09/29/2017	Brian Hinks	Safety Coordinator
Approved	09/29/2017		Transmission Operations Manager
Reviewed	10/04/2018		Safety Program Coordinator
Approved	10/04/2018		Transmission Operations Manager
Reviewed	12/20/2018		Safety Program Coordinator

Approved	12/20/2018		Transmission Operations Manager
Approved	2/21/2020		Transmission Operations Director
Approved	10/21/2020		Transmission Operations Director
Reviewed	3/17/2021	Tim Dodson	Safety Inspector
Approved	3/17/2021		Transmission Operations Director
Approved	7/29/2021		Transmission Operations Director
Approved	6/8/2022		Transmission Operations Director
Reviewed	3/9/2023		Safety and Health Director
Approved	3/9/2023		Transmission Operations Director
Reviewed	1/09/2024		Safety and Health Director
Approved	1/09/2024		Transmission Operations Director

24. Procedure Revision History

Effective Date	Revision Number	Revised By:	Revision History
07/11/2010	0	Michael Kaine Pam Pederson	Created from original Association System Switching Procedure
11/15/2010	1	Michael Kaine Pam Pederson	Errata Changes
03/03/2011	2	Michael Kaine Pam Pederson	Modified definitions; Updated per Safety Committee Comments
11/01/2011	3.0	Michael Kaine	Errata Changes and Definition Revisions
03/15/2012	4.0	Michael Kaine Alex Mendez	Deleted Hot Line Order, Revised regulator neutral confirmation (7.6 d), Added Dead Line Order, added Association approved personal protective grounds definition
9/25/2013	5.0	Alex Mendez Andy Minter	Format changes, Added Loop Permit and deleted Clearance Procedure. Procedure approval changes and removal of forms.
11/03/2014	6.0	Alex Mendez Andy Minter	Annual Review and Update. Deleted definitions; “Capable of Being Locked Out”, and “Servicing and/or Maintenance”; Revised Locks and Tags (8).
03/06/2015	7.0	Andrew Minter	Changes to outage notification deadlines
6/12/2015	8.0	Alex Mendez	Changes to “Hot Work” definition; added “Minimum Approach Distance” definition
7/7/2016	9.0	Andrew Minter Brian Hinks	Annual review and update, minor edits.
8/9/2017	10	Andrew Minter	Addition of Arc Flash and Outage Restoration sections.
10/05/2017	11	Andrew Minter	Modification of section 15 (Arc Flash)
10/15/2018	12	Andrew Minter	Annual review and minor edits

01/01/2019	13	Andrew Minter	Changes to Loop Permit procedure and re-named to Independent Switching Permit. Minor change to NRO tag requirements
03/02/2020	14	Andrew Minter	Minor revision and update
11/02/2020	15	Andrew Minter	Added applicability for equipment under construction. Added demarcation points for switching of Substation and Distribution equipment.
4/1/2021	16	Andrew Minter/Tim Dodson	Addition of Dead Line Order. Exclude work within MAD from the definition of Hot Work. Allow Independent Switching Permit on 3 phase lines.
7/29/2021	17	Andrew Minter	Define open and racked out switchgear breakers as visually open.
6/8/2022	18	Andrew Minter	Name change to CORE
3/15/2023	19	Andrew Minter	Annual review, clarification to the use of Do Not Operate tags.
1/15/2024	20	Andrew Minter	Annual review. No grounds for SOP clearance added.