

## Application Guidelines

### Attachment 1: Quarterly Misoperations Reporting Data

Field Name	Field Description	Example Data
Resubmittal Check	Identify if this is a resubmission of data. <b>Field Value:</b> Yes or No	No
Regional Entity	Identify Regional Entity. <b>Field Value:</b> FRCC, MRO, NPCC, RFC, SERC, SPP, TRE, or WECC	SERC
Entity Name	Enter Entity name. <b>Field Value:</b> User-defined Text	National Power
Misoperation Date	Enter the date of the Misoperation. <b>Field Value:</b> MM/DD/YYYY format	5/25/2010
Misoperation Time	Enter the time of the Misoperation. <b>Field Value:</b> HH:MM:SS format (use 24 hour clock)	10:02:31
Time Zone	Identify time zone. <b>Field Value:</b> ADT, AST, CDT, CST, EDT, EST, MDT, MST, PDT, PST, or GMT	EDT
Facility Name	Identify the name of the substation or generating station Facility where the Misoperation occurred. <b>Field Value:</b> User-defined Text	Lois Lane
Equipment Name	Identify the name of the generator, transmission line, transformer, bus or equipment protected by the Protection System that Misoperated. <b>Field Value:</b> User-defined Text	Kent - Lois Lane 115 kV line
Equipment Type	Identify the type of equipment being protected. <b>Field Value:</b> Line, Transformer, Generator, Shunt Capacitor, Series Capacitor, Bus, Shunt Reactor/Inductor, Series Reactor/Inductor, Dynamic Var Systems, Breaker, HVdc, or Other	Line
Facility Voltage (kV)	Identify the system voltage of the protected element (For transformers, use high-side voltage). <b>Field Value:</b> <100, 100, 115, 120, 138, 161, 230, 345, 500, 735, 765, or HVdc	115
Equipment Removed from Service	Identify the equipment removed from service (sustained or momentary - less than one minute) because of the Misoperation. <b>Field Value:</b> User-defined Text specifying the Circuits, Transformers, Buses (and also Breakers only if the Breaker is the only element to trip)	Lois Lane-Kent 115 kV line
Event Description	Provide a brief description of the event and detailed description of Misoperation root cause(s). <b>Field Value:</b> User-defined Text	Primary Ground Relay (KRP) failed to operate.

## Application Guidelines

		<p>Resulted in slow clearing at Lois Lane Substation. At Lois Lane, field found KA-4 relay with failed RRH/RRT coil that prevented a trip output from the KRP Primary ground relay.</p>
<p><b>Misoperation Category</b></p>	<p>Identify the Misoperation Category. <b>Field Value:</b> Failure to Trip – During Fault, Failure to Trip – Other Than Fault, Slow Trip, Unnecessary Trip – During Fault, or Unnecessary Trip – Other Than Fault</p>	<p>Slow trip</p>
<p><b>Cause(s) of Misoperation</b></p>	<p>Identify the root cause(s) of the Misoperation</p> <p><b>Field Value:</b> AC System - This category includes Misoperations caused by problems with the AC source to the Protection System equipment. Examples include Misoperation caused by CT saturation, loss of potential and rodent damage to voltage or current circuit wiring.</p> <p><b>Field Value:</b> As-left Personnel Error - This category includes Misoperations caused by incorrect as-left Protection System element settings following maintenance or construction activities. Examples include leaving test switches open, wiring errors where correct drawings were provided for use, leaving carrier grounds in place, installing the wrong relay settings, and making incorrect field settings during calibration testing.</p> <p><b>Field Value:</b> Communication Failure - This category includes Misoperations caused by protection scheme communication system failure include failure of installed transmitters and receivers. Examples include Misoperation caused by loss of carrier, spurious transfer trips associated with noisy channels, leased-line failure or performance issues caused by telephone company error, loss of fiber optic communication equipment, and microwave communication problems caused by weather conditions.</p> <p><b>Field Value:</b> DC System - This category includes Misoperations caused by problems with the DC source to Protection System equipment. Examples include problems with the battery, battery charging system, circuit breaker trip circuits, or loss of DC power to a relay or communication device.</p>	<p>Relay failures/malfunctions</p>

## Application Guidelines

	<p><b>Field Value:</b> Incorrect Setting/Logic/Design Errors - This category includes Misoperations caused by Protection System owner engineering staff errors. Examples include setting errors, errors contained in provided documentation, application errors, failure to coordinate settings, incorrect schematics and drawings, and having a protection scheme with multiple CT ground connections installed as specified by provided design drawings.</p> <p><b>Field Value:</b> Relay Failure/Malfunction - This category includes Misoperations caused by incorrect operation of Protection System relays. Examples include component failure, equipment physical damage, firmware problems, manufacturer error, aging capacitors causing a change in relay characteristics, misfiring thyristors, water damage, relay power supply failure, internal relay wiring/logic error and failure of protection scheme auxiliary tripping relays.</p> <p><b>Field Value:</b> Unknown/Unexplainable - This category includes Misoperations that occur for which a bonafide cause cannot be determined. If selecting this cause code as Misoperation root cause, then detailed documentation of investigative actions performed justifying selection of this cause code is required to be created and maintained for review.</p>	
<b>Protection Systems/Components that Misoperate</b>	Provide information on the protection systems/components that misoperate. Also list the relay model(s) and protection scheme(s) involved if the <u>Cause(s) of Misoperation</u> is identified as either "Relay Failure/Malfunction" or "Incorrect Settings/Logic/Design Errors". <b>Field Value:</b> User-defined Text	KRP ground relay and KA-4 used in DCB scheme
<b>Relay Technology</b>	Identify the relay technology installed if the <u>Cause(s) of Misoperation</u> is "Relay failures/malfunctions" or "Incorrect settings/logic/design errors". <b>Field Value:</b> Electromechanical, Solid State, or Microprocessor	Electromechanical
<b>TADS Reportable Outage?</b>	Identify if this outage is a TADS reportable outage. <b>Field Value:</b> Yes or No	No
<b>TADS Cause Code</b>	The corresponding TADS Cause Code is automatically added to this record if the outage is a TADS reportable outage. <b>Field Value:</b> (No entry required)	Not a Reportable TADS outage
<b>TADS Event ID(s)</b>	Enter each TADS Event ID(s) associated with the Misoperation event using TADS Form 5 if the outage is a TADS reportable outage. <b>Field Value:</b> User-defined Text	N/A
<b>Analysis and Corrective Action Status</b>	Identify Misoperation investigation and resolution status. <b>Field Value:</b> Analysis - In Progress, Analysis - Completed, Corrective Action - In Progress, or Corrective Action - Completed	Analysis - Completed
<b>Corrective Action Plan</b>	Identify the corrective actions taken. <b>Field Value:</b> User-defined Text	The powerline carrier

## Application Guidelines

---

		transceiver at Lois Lane is scheduled to be replaced due to an unrelated failure. This KA-4 relay will be replaced at that time.
<b>CAP Target Completion Date</b>	Enter the Corrective Action Plan target completion date. <b>Field Value:</b> MM/DD/YYYY format	12/31/2010
<b>Actual CAP Completion Date</b>	Enter the Corrective Action Plan actual completion date. <b>Field Value:</b> MM/DD/YYYY format	
<b>Reported By</b>	Identify the reporting Entity point of contact. <b>Field Value:</b> User-defined Text	Tom Jefferson
<b>Phone Number</b>	Identify the reporting Entity point of contact phone number. <b>Field Value:</b> User-defined Text	959-867-5309
<b>E-Mail Address</b>	Identify the reporting Entity point of contact E-Mail address. <b>Field Value:</b> User-defined Text	TJ@NPI.net
<b>Date Reported</b>	Enter the report date. <b>Field Value:</b> MM/DD/YYYY format	6/30/2010