

NERC

NORTH AMERICAN ELECTRIC
RELIABILITY CORPORATION

Outside Management Control

Data Reporting Instructions – Appendix K

Module 10 - GADS Data Reporting Workshops

RELIABILITY | ACCOUNTABILITY



- It is common industry practice to measure actual equipment performance using all events, regardless of whether they fall within or outside the control of plant management
- It is also common industry practice to measure business goals related to equipment performance excluding events outside plant management control so that a plant is not penalized for problems that occur outside their control
- In 2006 NERC began to give credit for Outside Management Control (OMC) events so that generating unit reliability could be more deeply analyzed

- Grid connection or substation failure
- Acts of nature such as ice storms, tornados, winds, lightning
- Acts of terror or transmission operating/repair errors
- Environmental limitations such as low cooling pond level, or water intake restrictions
- Lack of fuels
 - Excludes interruptible fuel contracts
- Labor strikes
 - Excludes strikes because of plant management grievances

- Problem: There was an ice storm in February that lasted for three days which affected a lot of equipment and caused a number of unit outages. Your boss wants to know which events should be considered OMC.
- Question: Which of the following is an OMC event?
 - A. A regulator freezes up in an instrument cabinet due to a faulty heater
 - B. The air intake on a GT is iced over and collapses when the unit is started because an access door wasn't opened to prevent a vacuum
 - C. An outdoor bus made of pipe fails due to frozen water inside it cracking it open because there were no drain holes
- Answer: None of the above
- Explanation: All of these failures are within plant management control – A) poor maintenance, B) not following procedures, and C) faulty design

- Problem: Your plant uses natural gas as its only fuel and your supply contract stipulates that it is interruptible. Fuel for your plant is often interrupted during the winter when residential use is higher. A company digging a ditch outside your plant accidentally punches a hole in the gas pipeline to your plant interrupting your fuel supply.
- Question: Is this an OMC event?
 - A. Yes
 - B. No
- Answer: A. Yes
- Explanation: The interruption is not due to the gas supplier (gas unavailability) or transporter (pipeline capacity) which are under contract, but rather to an accident outside the plant boundary

- DRI:
 - Appendix F
 - OMC statistics defined
 - The equations are the same but they have different names to denote that OMC events were excluded when calculating the input terms
 - Example: statistic with all events – EAF
 - Example: statistic without OMC events - XEAF
 - The goal of OMC is to only adjust unit availability since it is not known if the unit would have run or gone on reserve shutdown had an OMC event not occurred
 - As a result users are cautioned that the concept of OMC cannot be perfectly implemented and the statistics can exceed 100% at times
 - Appendix K
 - Contains the description of Outside Management Control
 - Lists the OMC cause codes

- GADS is a system to track and report equipment reliability.
- GADS is often used to calculate/track reliability goals for units/plants/companies which was not its original purpose.
- Many “contentious” GADS discussions are actually goal discussions.
- Some of GADS/goals issues are alleviated by the use of OMC codes.
- Other issues such as business decisions may affect the GADS results. (Decision saves company money but GADS metrics are worse)
- Some equipment has another organization maintaining equipment instead of plant, and there is no OMC code for that equipment.

- What can you do to resolve the GADS vs. goals issue?
 - Use the OMC codes if applicable
 - Develop an internal exclusion process to remove events from your goals while correctly reporting the event to NERC
 - The internal process will require you to calculate MWh from your events using your GADS software, so that you can put the revised numbers in a “hand calculation.”
- What will this process do for you?
 - Get plant buy-in for the correct reporting of GADS events to NERC.
 - Allow a company to exclude MWh related to deliberate, sound business decisions having a negative impact on goals.
 - Allow for events that are outside plant management control to be excluded from goals even though there are no OMC codes for the event.
- This is not a NERC endorsed approach. For information only.

Problem

- The generator step-up transformer (3620 main transformer) fails at a power plant.
- The transformer belongs to the plant, but all maintenance and testing is performed by the transmission/substation maintenance organization.
- The plant believes this is outside their control and should be considered an OMC event.
- What should the plant report to NERC? What about the plant reliability goal?

GADS Answer:

- The event should be coded to 3620 main transformer to correctly capture the equipment that failed for NERC purposes. There is not an OMC code for this although other equipment in the switchyard does have OMC codes.

Possible internal option:

- If the event was a sudden failure and could not have been predicted, who maintains the equipment is not an issue; and the event would not be considered OMC.
- If the failure is related to improper maintenance/monitoring by substation maintenance, the plant can ask their company management to exclude the event from internal reliability goal calculations.

Problem:

- A 125 MW steam unit experiences a generator failure starting up from a planned outage.
- This is a high cost unit and is unlikely to be dispatched very often. The plant manager and his generation VP decide the generator rewind should be performed on straight time to save the company money. The outage is 3X longer with straight time.
- What should be reported to NERC? What adjustment will the plant manager request be made to cover this work in his reliability goals?

GADS Answer:

- The plant will report a U1 forced outage to NERC for the duration of the repair as per instructions in the GADS DRI. GADS only cares about the status of the unit and is not interested in the economics of the repair.

Possible internal option:

- The plant manager and the generation VP agree that the plant will only be accountable for what time it would have taken to repair the unit if it had been worked 24 hours/day as an emergency repair. This will require the corporate staff to use data from their GADS software in order to perform a “hand calculation” to get a plant reliability value with part of the event excluded.



Questions and Answers