

**MIAMI UNIVERSITY**  
**OXFORD CAMPUS**  
**EMERGENCY DEMAND RESPONSE PLAN**

May 31, 2017

## **OXFORD CAMPUS EMERGENCY DEMAND RESPONSE PLAN**

**The purpose** of this document is to provide guidance to the leadership of Physical Facilities, Goggin, and University Communications in the event of a **DECLARED ELECTRICAL EMERGENCY EVENT for the OXFORD CAMPUS**. Personnel will be mobilized to enact measures through a combination of onsite generation and reducing electrical consumption to reach the nominated electric import. In the event of a declared electrical emergency, it is imperative that swift action must be taken.

The NRG Curtailment Solutions program parameters are:

- a. The frequency an event can be called: maximum of 10 per year for a maximum of 6 hours continuous per event. So a potential of 60 hours in one year. (Note: in this area an event has never been called)
- b. You will be notified a minimum of **60** minutes prior to the beginning of an event.
- c. An event can only be called from June 1<sup>st</sup> thru September 30<sup>th</sup> between the hours of Noon to 8 pm, Monday thru Friday excluding holidays.
- d. Miami must reduce it's electrical import load to 1.0 MW as measured at the McGuffey Substation meter.
- e. Program is based on the preceding years Peak Load Contribution (PLC). The 2017 PLC the Oxford Campus is 3.103 MW.
- f. If Miami fails to reduce their load to the nominated level of 1.0 MW, Miami will not receive payment for their nominated load
- g. If no events are called during a particular year, Miami is expected to perform a test date (TBD). The test is one hour during which the Oxford Campus must reduce import power to reach the nominated amount (1.0 MW).

When a declared electrical emergency event occurs, NRG Curtailment Solutions will notify six Miami personnel via phone. Doug Hammerle will be the lead event coordinator, Scott Lessing will be 1<sup>st</sup> backup, and Mark Lawrence 2<sup>nd</sup> backup. The event coordinator will start the notification tree rolling.

### **Event Coordinator Responsibilities**

Contact via email and text messaging the individuals on the Contact list below to inform them of the hour and duration the event will occur. Each individual contacted shall reply back immediately to inform the event coordinator that they have received the message and availability yes/no of proceeding with their groups responsibilities. If no response is received within 30 minutes from at least one of the areas of contact, then each individual (in order) shall be attempted to be contacted, until someone is reached who can enact their areas responsibilities.

### **MIAMI PFD EVENT COORDINATOR**

Doug Hammerle, Dir. of Energy Systems, Workphone: 513-529-1696, Cellphone: 513-839-6035, E-mail: [hammerd@miamioh.edu](mailto:hammerd@miamioh.edu)

Scott Lessing, Electric System Operation Manager, Workphone: 513-529-8036, Cellphone: 513-293-9989, E-mail: [lessinsw@miamioh.edu](mailto:lessinsw@miamioh.edu)

Mark Lawrence, Utility System Manager, Workphone: 513-529-9567, Cellphone: 513-680-0272, E-mail: [lawrenme@miamioh.edu](mailto:lawrenme@miamioh.edu)

### **STEAM PLANT**

Gene Rader, Asst. Utility Systems Manager, Workphone: 513-529-4026, Cellphone: 513-839-6054, Home: 513-796-5541, Email: [raderce@miamioh.edu](mailto:raderce@miamioh.edu)

Jamie Roy, Utility Systems Maintenance Supervisor, Workphone: 513-529-4023, Cellphone: 513-773-5903, Home: 513-773-5903, Email: [royjl@miamioh.edu](mailto:royjl@miamioh.edu)

Steam Plant Operator, Control Rm. Phone: 513-529-4025

### **BAS SHOP**

Jeff Wyatt, Controls Engineer Workphone: 513-529-2591 Cellphone: 513-266-3209  
Email: [wyattjj3@miamioh.edu](mailto:wyattjj3@miamioh.edu)

Ryan Turner, BAS technician Workphone: 513-529-7015, Cellphone: 513-255-1462  
Email: [turneryr@miamioh.edu](mailto:turneryr@miamioh.edu)

### **Goggin Ice Arena**

Jon Elliott, Assistant Director of Building Operations, Workphone: 513-529-9814, Cellphone: 513-319-7042, Email: [elliottjl@miamioh.edu](mailto:elliottjl@miamioh.edu)

Kevin Ackley, Sr. Director of Goggin Ice Center, Workphone: 513-529-9802, Cellphone: 513-330-0477, Email: [ackleykm@miamioh.edu](mailto:ackleykm@miamioh.edu)

### **University Communications**

Claire Wagner, Director of University News & Communications, Workphone: 513-529-7592, Cellphone: 513-330-1145, Email: [wagnercm@miamioh.edu](mailto:wagnercm@miamioh.edu)

Carole Johnson, Assistant Director of University News & Communications, Workphone: [513-529-7593](tel:513-529-7593), Cellphone: [937-902-7639](tel:937-902-7639), Email: [Carole.Johnson@miamioh.edu](mailto:Carole.Johnson@miamioh.edu)

### **PFD Operation Center**

Sandra Mohr, Director of Operation Center, Workphone: 513-529-9891, Email: [mohrsg@miamioh.edu](mailto:mohrsg@miamioh.edu)

[pdfoperationscenter@listserv.miamioh.edu](mailto:pdfoperationscenter@listserv.miamioh.edu)

Operation Center Phone: 513-529-6111

# Operating Responsibilities by Group

## Steam Plant

Once text/email is received from event coordinator of the time and duration of the electric emergency event, the notified individuals shall verify that they are in a position to proceed with Steam Plant duties. The individuals are expected to respond to event coordinator via text/e-mail/phone their readiness and any known equipment issues(i.e. generator down). If no Steam Plant personnel respond to the event coordinator within 30 minutes of notice, the event coordinator will begin calling to verify Steam Plant personnel are ready.

Call will be received by Gene, Jamie or Steam Plant Operator on duty declaring an EMERGENCY DEMAND RESPONSE EVENT has been scheduled.

Call receiver to record in log book:

Caller's name \_\_\_\_\_  
Time of call \_\_\_\_\_  
Event start time \_\_\_\_\_  
Event end time \_\_\_\_\_  
Call receiver's name \_\_\_\_\_

Wartsila engine operator on shift is to be ordered to prep and start both Wartsila engines loading each to their 5400 kVA capacity.

**NOTIFY SUPERVISOR IMMEDIATELY IF ENGINES FAIL TO START OR FAIL TO RUN. SUPERVISOR TO REPORT FAILURE BACK UP TO EVENT COORDINATOR.**

Steam Plant Operator is to notify Gene Rader and Jamie Roy that DEMAND RESPONSE EVENT has been declared.

Engine Operator is to get Schneider Electric Structureware site on main control room and Wartsila control room monitor screens. Site IP is <http://10.3.9.188/web/> .

- A. To view the electric meter data go to Schneider Electric Website (10.3.9.188/web/)
- i. User name "operator" password "operator"
    1. Diagrams
    - a. Transmission
  - i. Monitor the "Duke Import Load"

Operator is to then start both 1 MW Steam Plant emergency generators using the following process:

**Until CE POWER is done with their automation upgrade, the procedure to start the 1 MW Gen Set's will be in flux, Gene Rader and Jamie Roy need to be consulted to obtain current status of each 1 MW Gen Set and the starting/paralleling procedure.**

~~Proceed to the second floor of the new electric room off mezz level.~~

~~Locate MASTER CONTROL PANELS~~

~~FOR MAIN SWITCH GEAR~~

~~AND EMERGENCY GENERATORS control panels on far wall upon entering~~

~~Go to first panel on left of three GENERATOR No 1~~

~~Locate ECS switch (black T handle) and ensure switch is in GCP setting~~

~~Find ENGINE/GENERATOR~~

~~CONTROLLER over Woodward Control Instrument~~

~~Confirm controller is in AUTOMATIC mode with small amber light illuminated under LCD numeric screen on controller.~~

~~If not: Depress blue STOP button~~

~~Depress and hold blue RESET button for 3 seconds~~

~~Depress blue AUTO button to set controller in AUTO~~

~~Go to second panel in the center of three GENERATOR No 2~~

~~Locate ECS switch (black T handle) and ensure switch is in GCP setting position~~

~~Find ENGINE/GENERATOR~~

~~CONTROLLER over Woodward Control Instrument~~

~~Confirm controller is in AUTOMATIC mode with small amber light illuminated under LCD numeric screen on controller.~~

~~If not: Depress blue STOP button~~

~~Depress and hold blue RESET button for 3 seconds~~

~~Depress blue AUTO button to set controller in AUTO~~

~~Go to third panel on right of three MASTER CONTROLS~~

~~Locate SMS switch (black T handle) and ensure switch is in AUTO setting position~~

~~Locate OPERATOR INTERFACE PANEL touchscreen~~

~~Confirm that it is on Generator #1 Detail/Data page, visible at top of page between date & time fields or else depress Gen1~~

~~Control tab button at bottom of touch screen to display~~

~~Locate and depress grey button in upper left of screen — START  
Gen #1 — on touch screen  
Monitor generator start and allow to stabilize for approximately one minute.  
Locate and depress blue button in upper right of screen — Push to  
Enable Gen #1  
Synchroscope  
Confirm Synchroscope operation by observing dial indicator rotating around center pin~~

~~Locate and depress grey button at middle right of screen — CLOSE  
Gen #1 CB — on touch screen  
Dial indicator will rotate and freeze in the 12 o'clock position indicating synchronization was successful and generator circuit breaker closure to the power buss (floor below).  
Generator is now producing power to the buss  
Locate and depress white — ONE  
LINE tab button at bottom of touch screen display  
Page will display electric status.  
Locate and view G1 Blue Power Block in the upper left of the display  
Four lines of data should display:  
— kW should have a value greater than 0 and rise to approx. 850  
— Hz should have a value of approx. 60  
— Volts should have a value of approx. 480  
— Amps should have a value greater than 0  
This confirms Gen 1 is in production and safely generating power for the plant.~~

~~Repeat process to start Gen 2 hitting Gen 2 buttons/tabs/pages as appropriate.~~

~~All four generators are now running.  
Operators are to report any problems to Supervisors IMMEDIATELY.  
Operators are to monitor campus power import level by going to the Schneider Electric screen on the monitors. Locate the value at the end of the line in the middle of the screen kVa@CAMPUS\_TOTAL\_LOAD\_kVA: which is the import load value.  
Operate generators to limit import to a maximum of 5000 kVA in that field.  
Run generators and control import to 5000 kVA max until the end of the scheduled event.~~

~~At end of event shut down plant emergency generators and restore controls to normal settings.~~

## **BAS Group**

1. Once text/email is received from event coordinator of the time and duration of the electric emergency event. BAS Group personnel shall make sure they can log into Apogee, then respond to the event coordinator via text/email/phone that they are online and ready. If no BAS personnel respond to the event coordinator within 30 minutes of notice, the event coordinator will begin calling to verify BAS personnel are ready.
2. Begin shedding load close to the actual event time stated, do not shed load too early.
3. Proceed with the **Normal Demand Response**

### **NORMAL DEMAND RESPONSE**

- A. Open the “Global Commander” icon. Set the “day clg stpt” for all 2023 applications to 76 degf. (recommend doing 45 minutes ahead of event)
  - B. Command **OFF** all the “HW.\*PRI” points(recommend 30 minutes ahead of event)
  - C. Command **ON** the “CAMPUS.DEMAND.RESPONSE” point. (this point controls miscellaneous building lighting and exhaust fans)(recommend 20 minutes ahead of event)
  - D. Command the “CHWS.SECONDARY.TEMP.SETPT” and the “CHW.PLANT.SETPT” for NCP and SRP chiller plants to 46 degf.(recommend 15 minutes ahead of event start)
  - E. Coordinate with GEP Operator to put GEP Plant in Demand Response Mode. Point is Commandable on the “Chiller Staging “ page
  - F. Put YPC in Demand Response Mode, Command **OFF** the Colmac DHW heater, and Command **OFF** the Chillit HP Chiller.
- 4. CONTINGENCY PLAN IN CASE OF LOSS OF ONE OF THE PEAKING GENERATORS**
- A. Event coordinator will communicate with BAS personnel to initiate activation of the contingency plan, the following load shedding procedure will be initiated. BAS personnel to watch import level to Oxford campus on the Schneider Electric webpage to keep Duke Import Load at no more than **1 MW**.
  - B. To view the electric meter data go to Schneider Electric Website (10.3.9.188/web/)
    - i. User name “operator” password “operator”
      1. Diagrams
        - a. Transmission
          - i. Monitor the “Duke Import Load”

### **Contingency Plan Load Shedding Priority (Loss of one of the Peaking Generators)**

1. Command **OFF** the South Chiller Plant. Command **OFF** "SRP.CHLR.PLANT.PRI" point.
2. Command **OFF** the Air Handling units at Millett Hall
3. Command **OFF** Western Dining Hall
4. Command **OFF** the GEO Thermal Plant. (Command OFF the Plant Enable point on the Chillers screen.)
5. Command all Supply fans to 40%. (Command "\*.SVO" to 40%)
6. Command to 0% all mixed air damper controls. (Command "\*.MAO")
7. Command **OFF** Yager Stadium AHU-01 and AHU-03
8. Command **OFF** remote Chillers at:
  - a. Murstein
  - b. Boyd Hall
  - c. CAB
  - d. Kumler
  - e. CSB AHU-05 DX

# Goggin Ice Arena

## **Electricity Demand Response Protocol:**

- In the event of a demand response Jon Elliott will serve as the main point of contact. His backup will be Kevin Ackley.
- Once text/email is received from the event coordinator of the time and duration of the electric emergency event, The text/email will state when the event will occur. If you get a text/email, make sure you can log into Apogee, then respond to the text that you are online and ready. If you do not respond then the event coordinator will begin calling.
- It is the goal of the Goggin operations staff to meet the reduction need and maintain the expected experience of our customers. It is our expectation that during camps Stages 3 and 4 would create a significant disruption for our customers and will be avoided at all cost. When students return our ice usage is lighter during the period when we may be called on to reduce our load and Goggin should be able to facilitate both stages without a significant impact to our customers.

In either response protocol Goggin Operations staff will actively monitor ice temperatures in order to avoid a potential loss of ice that would offset savings due to participation in this program. If an extended run of days is expected Goggin Operations staff will make changes to the systems during off-peak hours to help facilitate being able to attain the reduction goal while avoiding any programming loss.

## **If a demand response occurs during summer camps:**

Goggin is responsible for a minimum reduction in electricity of 400kW (500kW preferred)

### Stage 1

- Assess current electric demand from Goggin
- Manually turn compressors 2-3-4 to off.
- Eliminate every other ice resurface from schedule.
- Operate off air handlers 1-2-5-7-10-11-12.
- Reduce lighting in unoccupied areas to emergency levels.
- Limit lighting in occupied areas to half or off.
- A pad lighting general use, B pad maintenance
- Re-assess electric demand from Goggin

### Stage 2 (If further reduction needed to achieve goal)

- Operate off air handlers 4-6-9

- Re-assess electric demand from Goggin

Stage 3 (If further reduction needed to achieve goal)

- Eliminate all ice resurfaces from schedule.
- Manually turn off compressor 1
- Re-assess electric demand from Goggin

Stage 4 (If further reduction needed to achieve goal)

- Cancel all programming
- Reduce all lighting in building to emergency levels.
- Reduce any unnecessary computer/electronic usage.

## University News and Communications

1. Once notice is received from event coordinator of the time and duration of the electric emergency event, a mass e-mail and text message shall be sent out to the Oxford Campus Faculty/Staff and Students stating the following: (Note: Event coordinator will get mass email if not received within 30 minutes, event coordinator will call primary contact, then backup contact.)

**To e-mail campus wide *Anyday Anymonth XX at X:00 pm:***

***Electric Power Emergency Declared X p.m to X p.m.***

*A regional electric emergency has been declared for Southwest Ohio today between the hours of X:00 pm and X:00 pm. To assist our local utility company and our community during this power emergency, Miami asks all members of the Oxford campus to reduce their electric usage from X p.m. to X p.m. today. Please support these efforts by turning off all electronic items that are not essential for that period, such as lights, coffee makers, chargers, etc. Thank you.*

2. If day ahead notice is received from event coordinator(either Doug Hammerle, Scott Lessing, or Mark Lawrence) an additional notice will be put into the Miami e-report stating the following:

***Post in the Miami Wire tomorrow *Anyday Anymonth XX<sup>th</sup>, 2015:****

***To the Miami Oxford community: *Electric Power Emergency Declared****

*A regional electric emergency has been declared for Southwest Ohio today between the hours of X:00 pm and X:00 pm. This may result in rolling brownouts or blackouts if corrective measures are not taken. The University will assist by reducing its electric consumption during the prescribed time window. The conservation measures may result in less than ideal building air temperatures and lighting levels. Every effort will be made to conserve power while still providing a suitable learning and working environment. The University community is asked to individually contribute by turning off all electronic devices that are not essential for that period (e.g. lights, coffee makers, chargers, etc.). We appreciate everyone's participation.*

## PFD Operation Center

1. Once notice is received from event coordinator of the time and duration of the electric emergency event, **PFD Ops shall send via e-mail to Oxford campus POC's except CSC** (Note: Event coordinator will get mass email if not received within 30 minutes, event coordinator will call primary contact, then backup contact.)

**Anyday Anymonth XX<sup>th</sup> at noon:**

To Miami Oxford campus POC's: **Electric Power Emergency Declared**

A regional electric emergency has been declared for Southwest Ohio today between the hours of **X:00 pm and X:00 pm**. This may result in rolling brownouts or blackouts if corrective measures are not taken. The Physical Facilities Department will assist the local utility company today by reducing electric consumption during the power emergency. Although these events are rare, it is important to help the local utility and to protect the University's power supply. The University community is asked to conserve electricity. Please contribute by turning off everything that is not essential for that period (i.e. lights, coffee makers, chargers etc.). We appreciate everyone's participation.

Please contact Mark Lawrence, Manager of Utilities Systems at 680-0272 with questions, comments or concerns.

Thank you in advance for your efforts.