TEMPORARY CHANGE REQUEST

TCR NO.ENG-009, R3-001
(e.g., TCR-ENG-021-001)

The Temporary Change Request (TCR) Form is to be used to process urgent or minor changes for PPPL Policies, Organization/Mission Statements and Procedures. The TCR should be used when changes are:
1) urgent, and can not wait the 2-4 week period for Department Head review/comment, or
2) minor, and do not warrant Department Head review.

Person Requesting Change: John Lacenere

Department Name: Engineering & Infrastructure **Phone Ext:** 3308

Document Number: ENG-009 **Revision No.:** 3-001

Document Title: Electric Service Load Reduction

Reason for change: 3 Year Review Minor Changes

Change description: (Summarize and attach changed pages, with changes clearly indicated)
Inserted – "Agreement is provided by the Defense Energy Support Center (DESC) with Energy Curtailment Specialists, Inc. (ECS) Master Agreement (from Oct. 18, 2008 to Oct. 18, 2013).

Inserted - Experimental load and non- critical house power electrical loads will be shed to meet Target, which is **3.3 MW**.

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1. Does this TCR significantly alter the intent or scope of the document? **YES:**___ **NO:X**

2. Does this TCR significantly impact **ES&H**? **YES:**____ **NO:X**

If 1 or 2 is **YES**, Explain why the changes should not be routed for Department Head review:

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_____

Michael D. Williams **2/1/12**
Department/Division Head Approval **Date**

John DeLooper **2/1/12**
Head, Best Practices and Outreach **Date**

Release/Effective date of this TCR: **2/2/12**

Incorporate this TCR into next revision of this document? **Yes**X **No**

Subject:	Effective Date:	Initiated by:
Electric Service Load Reduction	February 12, 2009	Associate Laboratory Director for Engineering & Infrastructure
	Supersedes: Revision 2, dated Sept. 14, 2004	Approved: Director

TCR-ENG-009, R3-001

Applicability

This procedure describes the responsibilities and actions to be implemented by various PPPL groups, upon the decision to shed electrical load because of PPPL Demand Response Agreement or a high load in the region and/or a high cost to PPPL.

Introduction

The decision to reduce electrical energy consumption due to the participation in "Power Pay PJM" program or due to unusually high energy costs is at the discretion of Senior Laboratory Management. In 2003, the electrical energy market in New Jersey became fully deregulated meaning costs can vary on an hourly basis. While the possibility for extraordinary fluctuations exists, the probability is relatively low. However, procedural controls for handling such an event is important. This procedure has been designed to describe the process to be followed for shedding electrical load once the decision has been made to do so.

References

Demand Response Agreement between PPPL & Energy Curtailment Specialists (ECS) to reduce the electric demand by 800 KW during summer period. This agreement is provided by the Defense Energy Support Center (DESC) with Energy Curtailment Specialists, Inc. (ECS) Master Agreement (from Oct. 18, 2008 to Oct. 18, 2013).

ECS Interruptible Service (ESU Announcement)

EFE-001 - Electrical Power Reduction, (Maintenance and Operations)
CMG-01 - Load shed procedure, (MG Group)

Definitions & Acronyms

ECS – Energy Curtailment Specialists, Inc.
LMP - Locational Marginal Price
PJM RTO – Pennsylvania, New Jersey, Maryland Regional Transmission Operator
M&O – PPPL Maintenance and Operations Division
BAS – Building Automation System

Pennsylvania, New Jersey, Maryland Regional Transmission Operator (PJM RTO)
PJM Interconnection is a regional transmission organization (RTO) that plays a vital role in the U.S. electric system. Detailed information is available at:http://www.pjm.com/index.jsp

Locational Marginal Price (LMP)
The hourly integrated market clearing marginal price for energy at the location the energy is delivered or received.

Minimum Safe Target Demand
The amount of power in kW that is required to maintain a safe and secured facility; Experimental load and non- critical house power electrical loads will be shed to meet this Target, which is 3.3 MW.

Procedure

Responsibility	Action
Associate Director, Engineering & Infrastructure or Designee	1. Decides to shed electrical load based upon the load in the PJM RTO and/or the LMP cost in the PSE&G zone and the current weather forecast from NOAA for Mercer County. (Please note that this decision could be made 24 hours in advance during an extended heat wave or request from ECS during summer period.)
	2. Contacts the Communication Officer to make notification calls made to the Chief Operations Engineer (COE), MG operator, D-Site Shift Supervisor, M&O Central Plant Operator, and M&O BAS /Engineer.
Communications Officer	3. Announces via the EVES that PPPL will be shedding electrical load.
MG Operator	4. Assumes the responsibility to reduce the total PPPL site demand to the minimum safe capacity upon receiving notification from the Communications Officer
	5. Determines if the C-Site experiments are operating. Notifies the users to shut down the experiments and executes load shed procedure CMG-01.
	6. Monitors and records demand level every 15 minutes after all non essential electric loads have been shed. The targeted electrical demand load reduction is 800kW, or more.
D-Site Shift Supervisor/ COE	7. Shuts down NSTX Operations (through the NSTX COE), including the cooling water system when MG at 0 speed (except for component cooling water systems) upon notification.
	8. Notifies (or has COE notify) the M&O Plant Central Operator that only one chiller will be allowed to operate.
	9. Notifies the MG operator of the completion of shutdown.
	10. Stands-by for further direction from the Communication Officer.
M&O Central Plant Operator	11. Shuts down one (1) chiller and the associated pumps as per standard shut down procedure, **if two (2) chillers are in operation**.

12. Stands-by for further direction from the Communication Officer.

M&O BAS Engineer

13. Executes procedure EFE-001 upon notification and notifies MG operator when it is completed. Monitors HVAC environmental conditions and if there is a need to increase the site electrical demand; contacts the MG operator.

14. Stands-by for further direction from the Communication Officer.

Communications Officer

15. Notifies the MG Operator, D-Site Shift Supervisor, COE, M&O Central Plant Operator, and M&O BAS Engineer upon receiving decision to resume normal operation. Also makes announcement via EVES that PPPL is restoring loads which were shed to save energy.

COE

16. Contacts the head of NSTX Engineering Operations to decide on resumption of NSTX operations, as appropraite.

M&O Central Plant Operator

17. Resumes chiller operations, as appropriate.

MG Operator

18. Notifies the users for each of the experiments at C-Site that the electrical load shed has been terminated.

19. Document the duration of the event and the demand record.