UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

June 15, 2000

LICENSEE: Commonwealth Edison Company

FACILITIES: Dresden Nuclear Power Station, Units 2 and 3
LaSalle County Station, Units 1 and 2
Quad Cities Nuclear Power Station, Units 1 and 2

SUBJECT: SUMMARY OF MAY 31, 2000, MEETING WITH COMMONWEALTH EDISON COMPANY TO DISCUSS FORTHCOMING LICENSE AMENDMENT REQUESTS FOR A POWER UPRATE AT DRESDEN AND QUAD CITIES AND THE TRANSITION TO GE-14 FUEL AT DRESDEN, QUAD CITIES AND LASALLE

On May 31, 2000, the U. S. Nuclear Regulatory Commission (NRC) met with the Commonwealth Edison Company (ComEd) to discuss the forthcoming license amendment requests for a power uprate at Dresden and Quad Cities, and the transition to GE-14 fuel at Dresden, Quad Cities, and LaSalle.

After introductions, ComEd discussed their planned transition to GE-14 fuel. ComEd noted that they already had NRC approval for all generic topical reports that will be needed for the transition. ComEd stated that they would submit, for information only, their methodology for developing coefficients and additive constants that would permit ComEd to use GE correlations to analyze the co-resident Siemens fuel. The staff stated that this comprised an unreviewed methodology since the GE correlations would be benchmarked against the Siemens correlation instead of actual data. ComEd agreed to submit their methodology for staff review. The staff also questioned whether the correlations could be used at the higher power levels following any uprate at Dresden and Quad Cities. ComEd stated that this issue would be included in their submittal.

ComEd then discussed their plans for the extended power uprate at Dresden and Quad Cities. ComEd intends to increase power to 2957 MWt (approximately 117% of the current power level) by taking credit for margin that was originally built into the plants. ComEd will use a "5th unit" approach in which they will analyze a set of analysis inputs that is bounding for the four Dresden and Quad Cities units. Since there are few differences in the four units, ComEd believes the 5th unit approach will be more efficient to analyze and review, and will also provide a consistent design bases. The staff stated that each plant's updated final safety analysis report (UFSAR) should provide an explanation of how the plant relates to the analyses. The staff also noted that, since Dresden and Quad Cities increased power by 5% power during the construction phase, their proposed 117% uprate puts them outside the 120% limit that was approved in the GE topical report. ComEd stated that they would address this issue in their submittal.

Finally, ComEd and the staff discussed the schedule. ComEd intends to submit their application by December 29, 2000, and will ask for the license amendments to be issued in time for Dresden's October 2001 refueling outage. The staff noted that ComEd's proposed schedule was very tight and may not be realistic. The staff also noted that ComEd has only discussed the impact on the reactor coolant system and has not completed its assessment of what changes need to be made to the rest of the plant.

A list of those attending the meeting is provided as Enclosure 1. The slides used by ComEd during the meeting are provided in Enclosure 2.

Stewart N. Bailey, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos.: 50-237, 50-249, 50-254, 50-265, 50-373, 50-374

Enclosures: 1. Meeting Attendees
2. Slides

cc w/o encls: See next page

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/RA/

Stewart N. Bailey, Project Manager, Section 2
Project Directorate III
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Distribution:
PUBLIC
J. Zwolinski (JAZ)
S. Black (SCB)
A. Mendiola
PD III-2 r/f
S. Bailey (SNB)
OGC
OPA (e-mail to OPA)
ACRS
T. J. Kim
Larry Rossbach
Ralph Caruso
Amy Cubbage
Joseph Donoghue
Tai Huang
George Thomas
Shih-Liang Wu
Raj Joel
Kerry Kavanagh
Leta Brown
John Hayes
Amar N. Pal
Paul Boenhert
August Czonenberg
M. Case, RIII
G. Grant, RIII

OFFICE	PM:PDIII/2	LA:PDIII/2	SC:PDIII/2
NAME	S. Bailey SNB	C. Moore for	A. Mendiola
DATE	06/ 14 /00	06/ 13 /00	06/ 14 /00

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O. Kingsley
Commonwealth Edison Company

Dresden, Units 2 and 3
LaSalle, Units 1 and 2
Quad Cities, Units 1 and 2

cc:

Commonwealth Edison Company
Site Vice President - Dresden
6500 N. Dresden Road
Morris, Illinois 60450-9765

Commonwealth Edison Company
Dresden Station Manager
6500 N. Dresden Road
Morris, Illinois 60450-9765

U.S. Nuclear Regulatory Commission
Dresden Resident Inspectors Office
6500 N. Dresden Road
Morris, Illinois 60450-9766

William D. Leech
Manager - Nuclear
MidAmerican Energy Company
P.O. Box 657
Des Moines, Iowa 50303

Vice President - Law and
Regulatory Affairs
MidAmerican Energy Company
One River Center Place
106 E. Second Street
P.O. Box 4350
Davenport, Iowa 52808

Chairman
Rock Island County Board
of Supervisors
1504 3rd Avenue
Rock Island County Office Bldg.
Rock Island, Illinois 61201

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

Chairman
Grundy County Board
Administration Building
1320 Union Street
Morris, Illinois 60450

Commonwealth Edison Company
Site Vice President - Quad Cities
22710 206th Avenue N.
Cordova, Illinois 61242-9740

Commonwealth Edison Company
Quad Cities Station Manager
22710 206th Avenue N.
Cordova, Illinois 61242-9740

U.S. Nuclear Regulatory Commission
Quad Cities Resident Inspectors Office
22712 206th Avenue N.
Cordova, Illinois 61242

Document Control Desk-Licensing
Commonwealth Edison Company
1400 Opus Place, Suite 400
Downers Grove, Illinois 60515

Mr. David Helwig
Senior Vice President
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Gene H. Stanley
Vice President - Nuclear Operations
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

Mr. Christopher Crane
Senior Vice President - Nuclear Operations
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 900
Downers Grove, Illinois 60515

cc:

Mr. R. M. Krich
Vice President - Regulatory Services
Commonwealth Edison Company
Executive Towers West III
1400 Opus Place, Suite 500
Downers Grove, Illinois 60515

Commonwealth Edison Company
Reg. Assurance Manager - Dresden
6500 N. Dresden Road
Morris, Illinois 60450-9765

Commonwealth Edison Company
Reg. Assurance Supervisor - Quad Cities
22710 206th Avenue N.
Cordova, Illinois 61242-9740

Ms. Pamela B. Stroebel
Senior Vice President and General Counsel
Commonwealth Edison Company
P.O. Box 767
Chicago, Illinois 60690-0767

Phillip P. Steptoe, Esquire
Sidley and Austin
One First National Plaza
Chicago, Illinois 60603

Assistant Attorney General
100 W. Randolph St. Suite 12
Chicago, Illinois 60601

U.S. NRC-LaSalle Resident Inspectors Office
2605 N. 21st Road
Marseilles, Illinois 61341-9756

Chairman
LaSalle County Board
707 Etna Road
Ottawa, Illinois 61350

Attorney General
500 S. Second Street
Springfield, Illinois 62701

Chairman
Illinois Commerce Commission
527 E. Capitol Avenue, Leland Building
Springfield, Illinois 62706

Illinois Department of Nuclear Safety
Office of Nuclear Facility Safety
1035 Outer Park Drive
Springfield, Illinois 62704

Regional Administrator
U.S. NRC, Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Commonwealth Edison Company
LaSalle Station Manager
2601 N. 21st Road
Marseilles, Illinois 61341-9757

Robert Cushing, Chief
Public Utilities Division
Illinois Attorney General's Office
100 W. Randolph Street
Chicago, Illinois 60601

Commonwealth Edison Company
Site Vice President - LaSalle
2601 N. 21st Road
Marseilles, Illinois 61341-9757

Commonwealth Edison Company
Reg. Assurance Supervisor - LaSalle
2601 N. 21st Road
Marseilles, Illinois 61341-9757

MEETING TO DISCUSS TRANSITION TO GE-14 FUEL AT DRESDEN, QUAD CITIES AND LASALLE AND POWER UPRATE FOR DRESDEN AND QUAD CITIES MAY 31, 2000

NAME	AFFILIATION
Stewart Bailey	NRC/NRR/DLPM
T. J. Kim	NRC/NRR/DLPM
Anthony Mendiola	NRC/NRR/DLPM
Larry Rossbach	NRC/NRR/DLPM
Ralph Caruso	NRC/NRR/DSSA/SRXB
Amy Cubbage	NRC/NRR/DSSA/SRXB
Joseph Donoghue	NRC/NRR/DSSA/SRXB
Tai Huang	NRC/NRR/DSSA/SRXB
George Thomas	NRC/NRR/DSSA/SRXB
Shih-Liang Wu	NRC/NRR/DSSA/SRXB
Raj Joel	NRC/NRR/DSSA/SPLB
Kerry Kavanagh	NRC/NRR/DSSA/SPLB
Leta Brown	NRC/NRR/DSSA/SPSB
John Hayes	NRC/NRR/DSSA/SPSB
Amar N. Pal	NRC/NRR/DE/EEIB
Paul Boenhert	NRC/ACRS
August Czonenberg	NRC/ACRS
Kevin P. Donovan	ComEd
Rod Krich	ComEd
James P. Malone	ComEd
John Nosko	ComEd
Joseph Sipek	ComEd
David C. Tubbs	MidAmerican Energy
Jens Andersen	Global Nuclear Fuel (GE)
Terry McIntyre	GE Nuclear Energy
Millan Straka	NUSIS
Patricia L. Campbell	Winston & Strawn

ENCLOSURE 1

ComEd Licensing Plan for Transition to GE14 Fuel and Extended Power Uprates

May 31, 2000

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ENCLOSURE 2

Agenda

- Purpose and Introduction — *Rod Krich*
- GE14 Fuel Transition — *Kevin Donovan / Jens Andersen (GE)*
  - Project Scope
  - Milestones
  - Licensing Analysis / Submittal
- Unit 5 Approach — *Kevin Donovan*
- Extended Power Uprate — *John Nosko / Joe Sipek*
  - Scope of Uprate
  - Modifications Required
  - Uprate Plan
- Summary — *Rod Krich*

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Purpose and Introduction

- To inform NRC staff of ComEd's overall plan, schedule, and technical approach for:
  - GE reload transition (DR/QC/LS)
  - Extended Power Uprate (DR/QC)
  - MELLL/ARTS project (DR/QC)
- To facilitate NRC resource planning for these initiatives

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Project Scope

- Fuel Transition from SPC's ATRIUM-9B to Global Nuclear Fuel - GE14 for all ComEd BWR units
- Extended Power Uprate to 117% for Dresden and Quad Cities units (2957 MWth)
- Implementation of MELLL/ARTS core operating package for Dresden and Quad Cities units
- QC/DR will be analyzed for Extended Uprate and MELLL/ARTS as a composite bounding model for the four units - referred to as Unit 5

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Major Milestones and Implementation Schedules

9/29/00	Submittal of Technical Specification change of methodology and references for GE Transition (DR/QC/LS)
	Informational submittal of methodology for modeling SPC fuel with GEXL (GE submittal)
12/29/00	DR/QC MELLL/EPU Submittal
	Anticipated Unit Startups
11/12/01	Dresden Unit 2
12/20/01	LaSalle Unit 1
2/25/02	Quad Cities Unit 2

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Fuel Type Changes

	From:	To:
Dresden Units 2 and 3	SPC 9x9-2 SPC ATRIUM-9B	Reloads of GE 14
Quad Cities Units 1 and 2	GE9B GE10 SPC ATRIUM-9B	
LaSalle Units 1 and 2	GE9B SPC ATRIUM-9B	

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GE14 Fuel Characteristics

- Optimized GE12 10x10 design
  - GE12 experience: 10 reloads, 1668 reload bundles up to 18 GWd/MTU
- 92 fuel rods, 14 of which are part length rods
- Ferrule spacers
- Debris filter
- Offset assembly for Dresden and Quad Cities
- GE14 Experience
  - ★ 28 LUAs in use at four plants
  - ★ 1st reloads- Kernkraftwerk Muehleberg (fall 99)- 36 bundles

Cooper	3/00	136 bundles (not yet in operation)		Pilgrim	5/01
Peach Bottom-2	7/00			Peach Bottom-3	7/01
Clinton	10/00			Limerick-2	8/01
Nuclenor	11/00				
Brunswick-2	2/01				

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Transition Licensing For Initial GE Cycles

- GE has NRC approval for all generic topicals that will be needed for transition.
- Approved methodologies supporting the transition are:

GE Methodologies	ComEd Methodologies
TGBLA06/Panac11 (neutronics)	CASMO3/MicroburnB
SLMCPR methodologies	with GEXL incorporated
ODYN (transients)	(neutronics)
GEXL (critical power)	
SAFER/GESTR (LOCA)	
ORIGEN (fission product inventory)	

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ComEd Submittals to the NRC

- Submittals to be Provided for Review and Approval
  - GE methodology and references Technical Specification Amendment Request
    - Addition of GE methodology references to Section 5 of ITS
    - Limited terminology changes
    - Bases updates to reflect GE fuel and methods (for information)
  - SLMCPR Change - if necessary will occur closer to reload
- Submittal of GE's CPR correlation and SLMCPR to non-GE co-resident fuel (for information)
- ComEd to submit clarification relative to use of GEXL in SPC methods for GNF supplied reloads
- Routine Plant/Cycle Specific Submittals:
  - COLRs
  - Start-Up Test Report
  - UFSAR Update

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Details on CPR Modeling Using GEXL to model SPC fuel

- GEXL to be used for design/licensing and monitoring of all fuel (both SPC and GE)
- NRC-approved GEXL to be used for GE14 and other GE fuel
- NRC-approved GEXL correlation will be used for ATRIUM fuel.

  Bounding and NRC-approved GEXL correlation will be used for SPC 9X9-2 fuel
- Simulated Test Database for ATRIUM fuel prepared with ANFB correlation
- Simulated Test Matrix defined to span application range
- Standard coefficient development and qualification techniques applied by GE
- Component uncertainties will be statistically combined to form overall correlation uncertainty for Safety Limit
- Overall conservatism of correlation uncertainty will be demonstrated by alternate method
- Grand Gulf RAI responses will be incorporated

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ComEd Expects to Apply 10CFR50.59 to:

- GE 14 Fuel Bundle Design, including
  - EPG applicability to GE14 fuel
- Cycle-Specific Neutronic Design and Licensing Analyses
- Cycle-Specific Thermal-Hydraulic, Transient, and Stability Analyses
- Cycle-Specific SAFER/GESTR LOCA Analysis/Results for all fuel types
- Extended Operating Domain/Equipment Out of Service Analyses
- Fuel Storage Criticality Analyses

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Unit 5 Analytical Approach for DR/QC

- What is Unit 5?
  - A bounding set of analysis inputs for the four Dresden and Quad Cities units for EPU/MELLL SAR (e.g. LOCA, containment analysis)
  - Safety analysis results/impacts due to EPU/MELLL will be presented in the PUSAR for review and approval
  - Unit/cycle specific models will be used for reload safety analyses according to the NRC-approved methods
- Why Unit 5?
  - Only a few differences between the four units (typical BWR3)
  - More efficient analysis and review
  - Common design bases for consistency and maintenance
  - Uprated core thermal power will be the same for all four units
- How?
  - Current safety analysis inputs of the four units were compiled/reviewed
  - Unit 5 model jointly developed by ComEd/GE by selecting the limiting parameter(s)
  - Justification for choice of limiting parameter compiled
  - Parameter choice is dependent on analysis

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Extended Power Uprate Background

- Applies to all four units at Dresden and Quad Cities
- Feasibility studies showed EPU is cost-effective for increasing generating capacity
- Significant factor in ComEd business planning
- Goal is to accomplish this as soon as practical (allowing time for LAR submittal and review)
- Targeting late 2001 and throughout 2002

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Scope of Extended Power Uprate

- Licensed Power Level increase to 117% of Dresden licensed limit
- GE licensed methodology for EPU
- NSSS impacts minimal (similar to Monticello)
- No reactor pressure increase
- Taking advantage of existing BOP system design margins (robust initial design)
- Modifications required
- Use of MELLL

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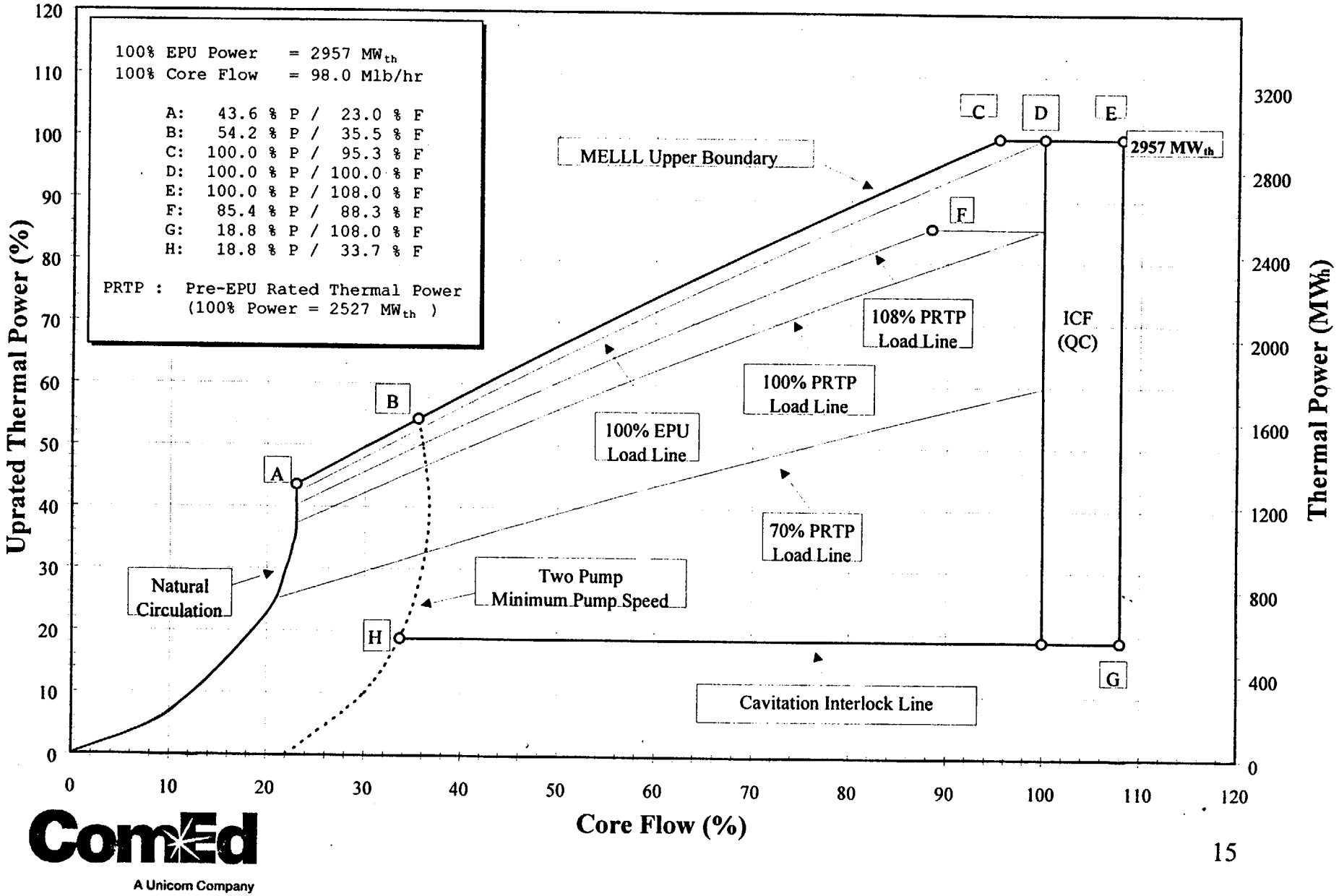
Dresden and Quad Cities MELLL Power/Flow Map



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Significant Modifications

- Replace HP turbines
- Add new condensate demineralizers
- Recirculation pump runback on FW or CD pump trip
- Off gas temperature conditioning
- Heater drain valve replacements
- Auxiliary power system changes
- Instrument setpoint changes
- Additional cooling towers at Dresden

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Uprate Plan

- Analytical and design approach
  - Based on ELTR, will include Unit 5 summary of results (thermal-hydraulic modeling) for GE14 representative core design
  - Extend Unit 5 concept to plant system evaluations
- Licensing submittal
  - Content (one submittal, two PUSARs, EPU/MELLL, incorporates previous RAIs)
  - Will include assessment of radiological consequences
  - ComEd committed to supporting NRC review
  - Issue to NRC by end of 2000
- Procedure revisions / training
- Modification installation
- Start-up testing and uprate implementation

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Extended Power Uprate Review

- EPU is cost-effective way to increase generating capability
- Sustained D/QC station performance improvements
- Using licensed GE methodology
- Unit 5 approach
- Minimal NSSS impacts, BOP system modifications
- Request for NRC support of schedule

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Anticipated Lead Unit Submittal Schedules

	D2C18	L1C10	Q2C17
SUBMITTALS FOR REVIEW AND APPROVAL			
Submittal of GE14 Transition Amendment	9/29/00	9/29/00	9/29/00
Submittal of DR/QC MELLL/Power Uprate Amendment	12/29/00	N/A	12/29/00
Requested NRC Approval of GE14 Transition Amendment	9/14/01	10/24/01	1/2/02
Requested NRC Approval of DR/QC MELLL/Power Uprate Amendment	10/15/01	N/A	1/2/02
SUBMITTALS FOR INFORMATION			
Methodology for modeling SPC fuel with GEXL.	9/29/00	9/29/00	9//29/00
Current Shutdown Date	10/19/01	11/23/01	2/1/02
Current Start-up Date	11/12/01	12/20/01	2/25/02
Start-Up Test Report	TRM		
UFSAR Update	Per 10 CFR 50.71(e)		

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