



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV

611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

June 13, 2001

Garry L. Randolph, Senior Vice
President and Chief Nuclear Officer
Union Electric Company
P.O. Box 620
Fulton, Missouri 65251

Dear Mr. Randolph:

This refers to the Regulatory Performance Meeting conducted in Callaway Plant Emergency Operations Facility on June 7, 2001. This meeting was conducted to discuss corrective actions associated with a violation and three related, white findings involving failures to maintain radiation doses as low as reasonably achievable.

The presentation included information concerning self-assessment results, corrective actions, and measures of effectiveness. The attendance list and presentation are enclosed with this summary (Enclosures 1 and 2).

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html> (the Public Reading Room).

Should you have any questions concerning this matter, we will be pleased to discuss them with you.

Sincerely,

A handwritten signature in cursive script that reads "Gail M. Good".

Gail M. Good, Chief
Plant Support Branch
Division of Reactor Safety

Docket No.: 50-483
License No.: NPF-30

Enclosures:

1. Attendance List
2. Licensee Presentation

Union Electric Company

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cc w/enclosures:
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Kay Drey, Representative
Board of Directors Coalition
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 Branch Chief, DRP/B (**WDJ**)
 Senior Project Engineer, DRP/B (**RAK1**)
 Branch Chief, DRP/TSS (**PHH**)
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<i>6/12/01</i>	<i>6/13/01</i>			

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MANAGEMENT MEETING ATTENDANCE		
LICENSEE/FACILITY	Union Electric/Callaway Plant	
DATE/TIME	June 7, 2001/10:00 a.m.	
CONFERENCE LOCATION	Callaway Plant Emergency Operations Facility	
NAME (PLEASE PRINT)	ORGANIZATION	TITLE
Gail M. Good	USNRC, Region IV	Chief, Plant Support Branch
Arthur T. Howell	USNRC, Region IV	Director, D&S
VINCENT GADDY	USNRC, REGION IV	SRI
Justin W Hiller	Ameren UE	Engineer, Regional Reg. Affairs
RON AFFOLTER	AMEREN UE	VP - NUCLEAR
Mike Cleary	Ameren Services	Supv.-Corp. Comm.
JERRY BEAUMING	Utility Resources	Proj Supv
Keith Gilliam	Ameren UE	HP Supervisor - ALARA
Bob Farnon	Ameren UE	GEN. SUPV HP
MARK REIDMEYER	Ameren UE	Regional Regulatory Affairs ^{Supv}
Garry Randolph	Ameren UE	Sr Vice President and Chief Nuclear Officer
Lana Jacobs	"	Confidential Secr.
Cynthia Sebacher	Ameren UE	Admin Supv
Gerald Hurle	Ameren UE	Radiation Supv
Paul Weiberger	Ameren UE	Supv, I.C
MIKE CURTIS	Ameren UE	Manage Op Support
DAVE NETERER	AMEREN UE	SUPV, WCE
E.W. Henson	Ameren UE	Regional Reg. Affairs
RR Rosefus	AMEREN UE	SUPV. Health Physics
DAW TROKEY	SEMA	REP PLANNER III
J.A. CLARK	AMEREN UE	Envr Respn Coordination
M.E. Taylor	Ameren UE	Mgr, Nuc Eng
Stuckey	Ameren UE	HP Supervisor Training

MANAGEMENT MEETING ATTENDANCE

LICENSEE/FACILITY	Union Electric/Callaway Plant	
DATE/TIME	June 7, 2001/10:00 a.m.	
CONFERENCE LOCATION	Callaway Plant Emergency Operations Facility	
NAME (PLEASE PRINT)	ORGANIZATION	TITLE
Ron Lamb	AMEREN U.E	Supt Work Control
Kathy Carroll	AMEREN U.E	CONF. SECRETARY
John Patterson	Ameren U.E	Supt WCM
Kevin Schoolcraft	Ameren U.E	Eng. - Reg. Regulatory Affairs
Tom McFarland	Ameren U.E	Supt. Materials Mgt
James H. Smith	Consultant	
Frederick J. Forck	Corrective Action	Root Cause Analyst
Jewey Thompson	Ameren HP	RIC Supervisor
Jim Peavy	Ameren U.E	Manager, STARS
Bill Jessup	Ameren U.E	Supt BPE
Scott Sandbothe	Ameren U.E	Supt Ops
Bob Miller	Ameren U.E	Supt RW
TOD MOSER	AMEREN U.E	SUPT. SYSTEMS ENG.
Jan Nehor	Ameren U.E	QA Auditor
Brenda Hampton	Ameren U.E	Engineer, BPE
JAMES GLOE	AMEREN U.E	TRAINING SUPERINTENDENT
DENNIS CORNWELL	AMEREN U.E	SENIOR TRAINING SUPV.
David Griese	Ameren U.E	Gen Supv NIS
Richard Rist	AMEREN U.E	Admin SUPT.
Stephen P. HARVEY	Ameren U.E	NIS
Josh Flury	Tribune	
Matt Hrusch	Fulton Sun	
DAVID S. HOLLABAUGH	AMEREN U.E	SUPT. DESIGN ENGR.

ENCLOSURE 2

Callaway Plant AmerenUE

NRC Public Meeting
June 7, 2001

Agenda

- Opening Remarks
- Dose Performance Self Assessment
- Self Assessment Results
- Corrective Actions
 - Corrective Actions to Address NRC Findings
 - Corrective Actions For Root Causes
 - Remaining Corrective Actions
- Measures of Effectiveness
- Closing Remarks

Opening Remarks

R. D. Affolter, VP Nuclear Operations

- Refuel 10 As Low As Reasonably Achievable (ALARA) Performance Issues Recognized
- Performance Concern Addressed in Corrective Action Program
- Scope and Causes Assessed
- Strategic Initiative to Improve Performance
- Actions Effective - Performance has improved

Dose Performance Self Assessment

Performance Concerns Recognized During Refuel 10:

- ALARA Program Work In Progress Reviews
- Review by Management Oversight Committee
- Corrective Action Documents Initiated
- Requested Institute of Nuclear Power Operations (INPO) to assist with performance assessment

Dose Performance Self Assessment

Self-Assessment Methods:

- Performed ALARA Post Job Review Procedures
- Conducted INPO Assistance Team Assessment
- Chartered scaffold optimization team to investigate outage scaffold dose
- Performed a self assessment with industry peer evaluators
- Assigned issue highest priority and performed a structured, systematic Root Cause Analysis

Self Assessment Results

Internal and Peer Assessments Identified Improvement Opportunities in these areas:

- ALARA Culture and Accountability
- Plant ALARA Review Committee
- Source Term Reduction
- Dose Reduction Initiatives and Plans
- Promotion and Communication of ALARA
- Planning and Scheduling for ALARA
- ALARA Program and Procedures

Self Assessment Results

Root Cause Analysis identified the extent of condition in 4 key areas:

- Management systems
- Work direction
- Procedure improvement opportunities
- Training improvement opportunities

Corrective Actions

R. R. Roselius, Superintendent Health Physics

Corrective Actions Addressed:

- NRC Findings
- Self Assessment Findings
- Root Cause Analysis Findings
- Broad Scope Issues

Corrective Actions Taken to Address NRC Inspection Report No. 50-483/00-17 Findings

Activities were scheduled and sequenced to reduce personnel dose:

- Review by the Plant ALARA Review Committee (PARC)
- A 24-hour Bioshield entry delay
- Activities restricted during midloop
- Steam Generators remain filled until end of outage.
- The Steam Generator primary work scheduled after RCS clean up and reactor core off load.
- Sludge lancing scheduled after most activities in the Bioshield are complete.

**Corrective Actions Taken to Address NRC
Inspection Report No. 50-483/00-17 Findings**

**Reactor coolant pump seal work performed when
S/G secondary side was filled:**

- RCP seal work scheduled and performed for optimum dose reduction.
- Outage scope growth was controlled.
- Plant ALARA Review Committee review of emergent work.

Corrective Actions Taken to Address NRC
Inspection Report No. 50-483/00-17 Findings

Mockup training was conducted to familiarize the
workers with plant equipment, use of tools and
techniques to reduce dose:

- S/G Vendor held accountable for more experienced workers.
- S/G Vendor required to develop an ALARA Plan addressing mockup training.
- Vendor ALARA Plan addressed worker experience issues.
- Mockup training was conducted, evaluated and documented for S/G manway, nozzle dam and robotics activities.
- Mock up training conducted for reactor head crew, RCP seal crew and other activities.

Corrective Actions Taken to Address NRC Inspection Report No. 50-483/00-17 Findings

Scaffolding ownership, work package review, scheduling and alternatives were improved:

- A Scaffold Optimization Task Team was formed.
- Each scaffold package received review by stake holders.
- Activity coordinators accountable for the scaffold dose.
- Alternatives to scaffolding were utilized.
- Scaffold activities not allowed in the Bioshield during high dose rate periods.
- Dedicated HP crew for scaffold coverage and review of scaffold permits.

Corrective Actions For Root Causes

Management Systems:

- Established Plant ALARA Review Committee
- Increased line ownership for ALARA
- Developed departmental and long range dose reduction initiatives.
- Reviewed ALARA standards, policies and good practices.
Benchmarking teams sent to 4 low dose plants.
- Established ALARA goals and performance incentives.
- Implemented process that assures ALARA objectives are achieved.
Procedures revised to provide guidance for stopping work.
- Promoted higher ALARA standards and expectations.
- Communication of dose performance improved .
- Increased participation in ALARA suggestion program.

Corrective Actions For Root Causes

Work Direction:

- Improved job planning and pre-job walkdowns.
- Improved guidance to work planners for incorporation of ALARA .
- Established expectations for ALARA in pre-job briefs.
- Established criteria for PARC review of work scope changes.
- Instituted ALARA performance incentives.
- Activity coordinators accountable for ALARA.

Corrective Actions For Root Causes

Procedure Improvement:

- Procedures have revised to provide appropriate ALARA guidance.
- Plant ALARA Review Committee proceduralized.
- Implemented lower thresholds for ALARA reviews.
- Instituted more rigorous ALARA reviews.

Corrective Actions For Root Causes

Training:

- Provided ALARA guidance to personnel responsible for scheduling and coordinating radiological work.
- Increased mockup training.
- Reinforced radiological work expectations with Safety Simulator.
- ALARA awareness campaign.

Remaining Corrective Actions

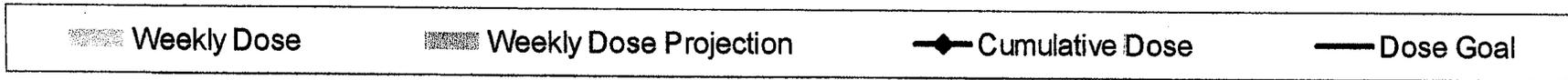
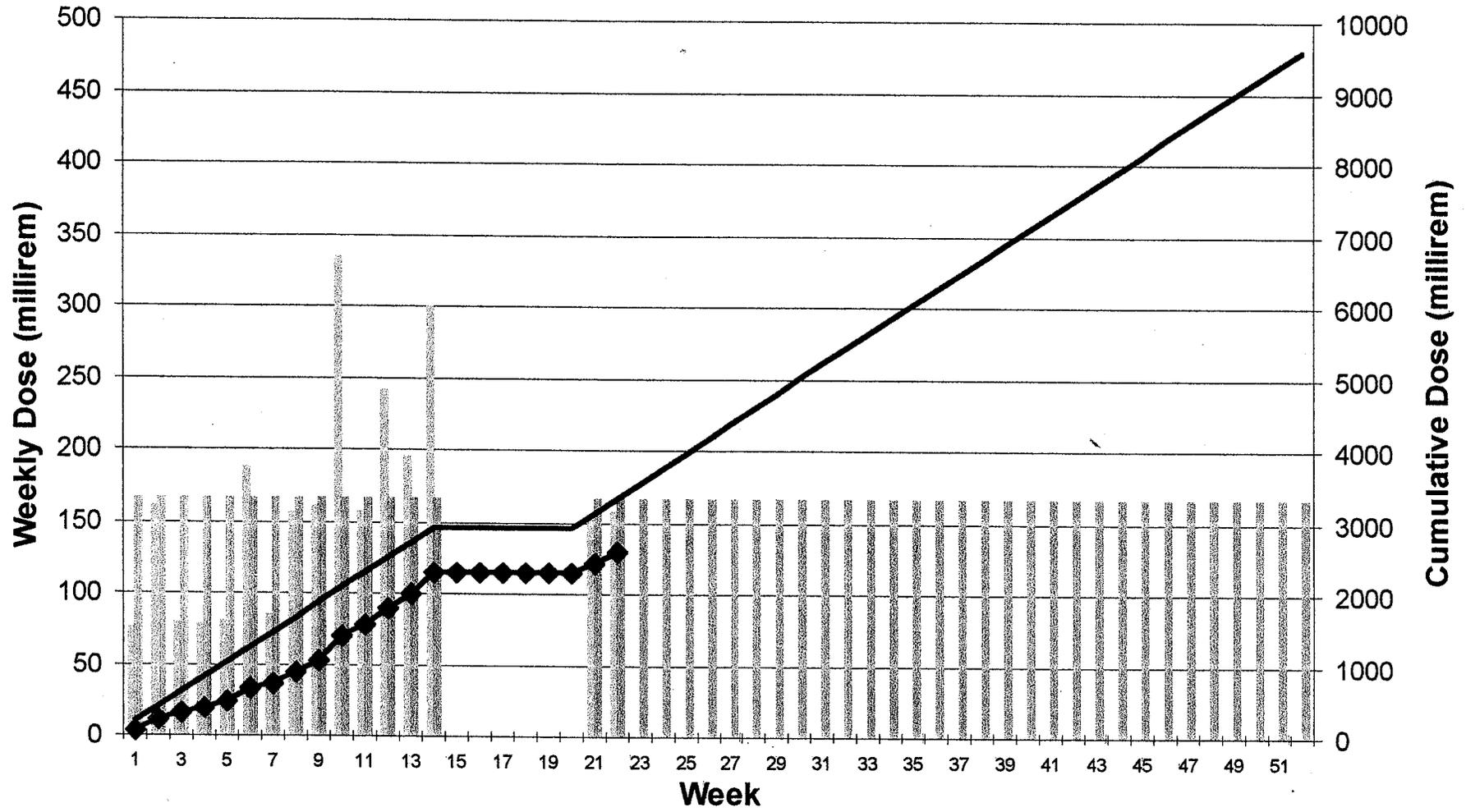
- Broad scope actions complete.
- Additional actions to enhance ALARA performance
 - A follow-up self assessment to evaluate effectiveness of corrective actions
 - Advanced training for work planners
 - Develop guidelines and acceptance criteria for mockup training
 - Improve ALARA planning in Work Control process
 - Institutionalize actions that add value

Measures of Effectiveness

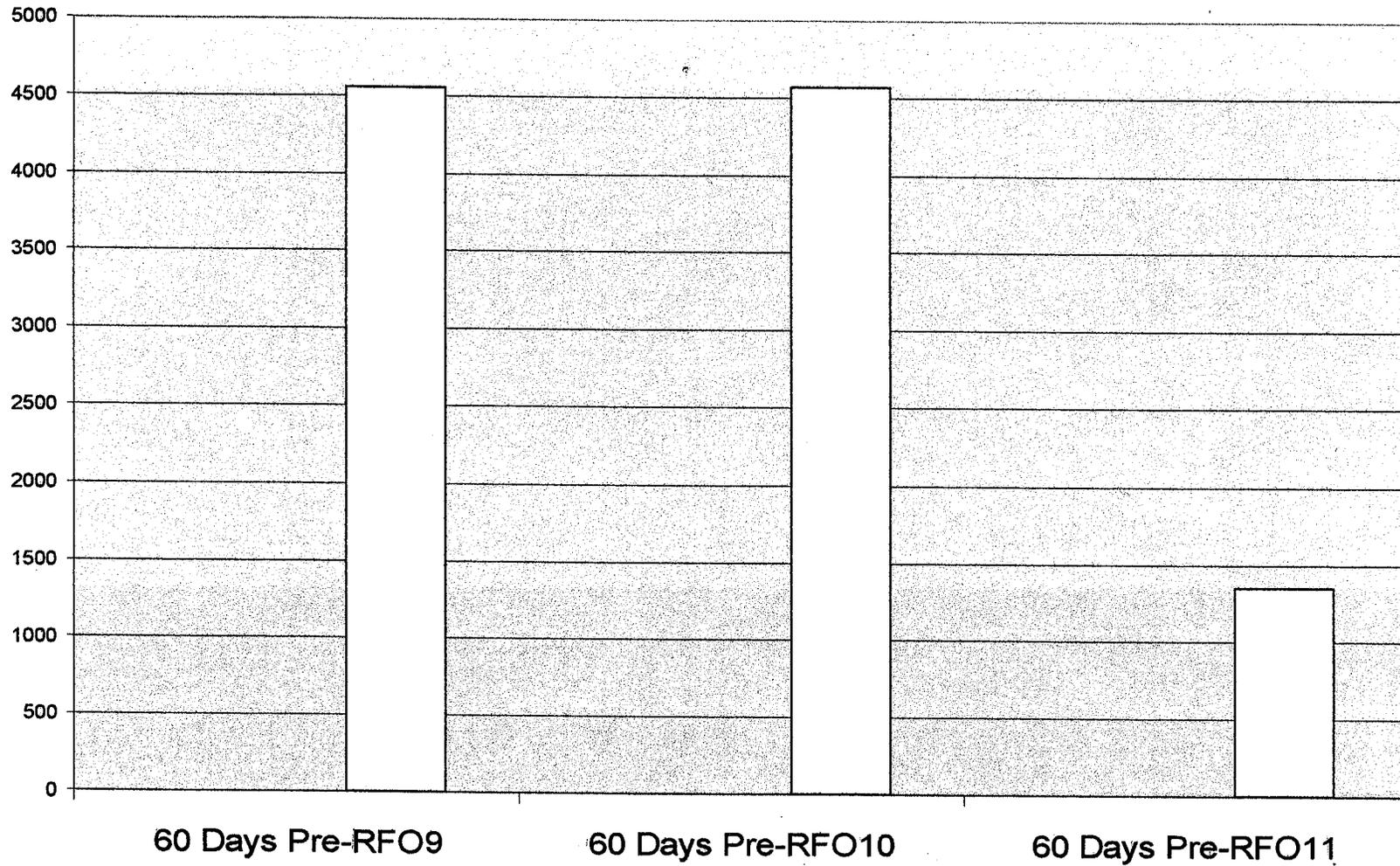
Dose Performance

- Normal Operations
- Refuel 11

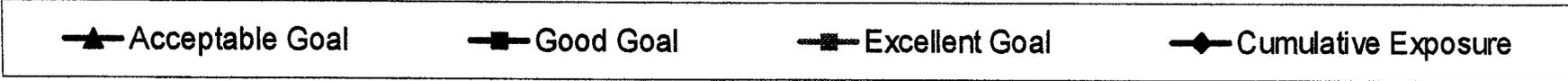
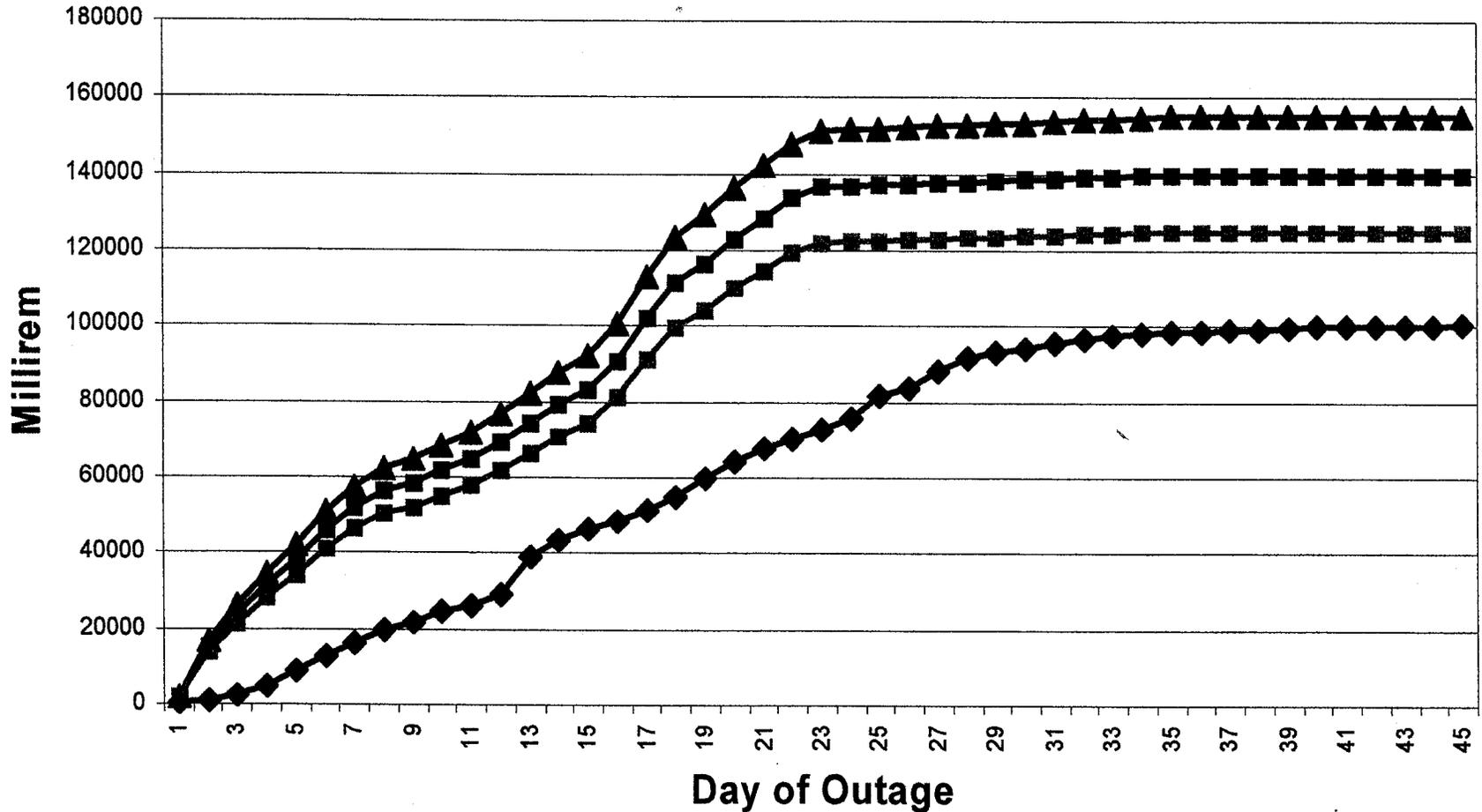
Cumulative Plant Dose Vs. 2011 Goal



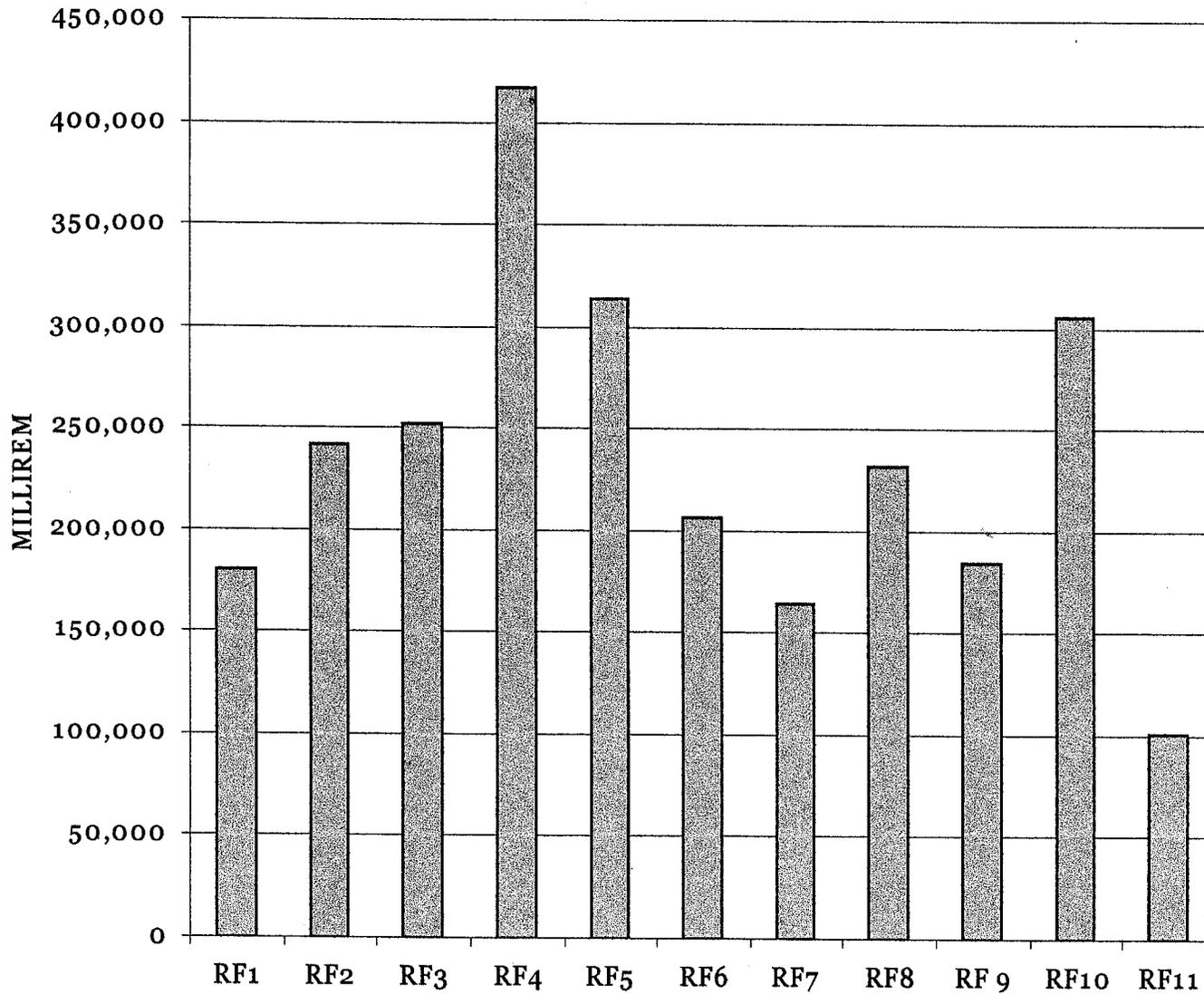
PRE OUTAGE DOSE COMPARISON



Refuel 11 Dose Trend



CALLAWAY PLANT REFUEL OUTAGE DOSE TRENDS



Closing Remarks

G. L. Randolph, Senior Vice President Nuclear