

February 7, 1996

Florida Power Corporation  
Crystal River Energy Complex  
Mr. P. M. Beard, Jr. (SA2A)  
Sr. VP, Nuclear Operations  
ATTN: Mgr., Nuclear Licensing  
15760 West Power Line Street  
Crystal River, FL 34428-6708

SUBJECT: MEETING SUMMARY - PRESENTATION ON CORRECTIVE ACTION PLAN CRYSTAL  
RIVER 3 - DOCKET NO. 50-302

Dear Mr. Beard:

This refers to the meeting requested by the NRC on February 5, 1996, in Atlanta, Georgia. The purpose of the meeting was to discuss the status of your progress on your Corrective Action Program. It is our opinion, that this meeting was beneficial.

Enclosed is a List of Attendees, Agenda and Florida Power Handout. The agenda included discusses the following topics: Corrective Action Program; Focus on Operations; Engineering/Technical Support; Regulatory Communication; Set Points; Control Complex Habitability; MUT Calculation and Natural Gas Pipeline.

In accordance with Section 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 placed in the NRC Public Document Room.

Should you have any questions concerning this letter, please contact us.

Sincerely,

Orig signed by Kerry D. Landis

Kerry D. Landis, Chief  
Reactor Projects Branch 3  
Division of Reactor Projects

Docket No. 50-302  
License No. DPR-72

Enclosures: 1. List of Attendees  
2. Meeting Agenda  
3. FPC Presentation Handout

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cc w/encls:

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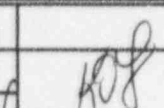
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Distribution w/encls:

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G. Hallstrom, RII  
PUBLIC

NRC Resident Inspector  
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## LIST OF ATTENDEES

### Florida Power Corporation

P. Beard, Senior Vice President Nuclear Operations  
G. Boldt, Vice President Nuclear Production  
G. Halnon, Manager, Nuclear Licensing  
L. Kelley, Director Nuclear Site Support  
S. Koleff, Supervisor, NPTS  
S. Powell, Senior Licensing Engineer  
P. Tanguay, Director Nuclear Engineering and Projects

### Nuclear Regulatory Commission

C. Casto, Chief, Division Reactor Safety (DRS), Engineering Branch, RII  
B. Crowley, Reactor Inspector, DRS, Maintenance Branch  
S. Ebnetter, Regional Administrator  
A. Gibson, Director, DRS, RII  
J. Jaudon, Deputy Director, DRS, RII  
K. Landis, Chief, Division of Reactor Projects, Branch 3  
D. Matthews, Director, Project Directorate II-1, NRR  
E. Merschhoff, Director, Division of Reactor Projects  
L. Raghavan, Project Manager, NRR  
L. Reyes, Deputy Regional Administrator



**AGENDA**  
**Florida Power**  
**Management Corrective**  
**Action Program**  
**February 5, 1996**

<b>Introduction</b>	<b>P. M. Beard</b>
<b>Corrective Action Plan and Related Issues</b>	<b>G. L. Boldt</b>
<b>Focus on Operations</b>	<b>G. H. Halnon</b>
<b>Engineering/Technical Support</b>	<b>P. R. Tanguay</b>
<b>Regulatory Communication</b>	<b>L. C. Kelley</b>
<b>Specific Issues:</b> <ul style="list-style-type: none"><li>• <b>Set Points</b></li><li>• <b>Control Complex Habitability</b></li><li>• <b>MUT Calculation</b></li><li>• <b>Natural Gas Pipeline</b></li></ul>	<b>W. S. Koleff</b> <b>S. C. Powell</b> <b>P. R. Tanguay</b> <b>P. R. Tanguay</b>
<b>Closing</b>	<b>P. M. Beard</b>

**FLORIDA POWER  
MANAGEMENT CORRECTIVE  
ACTION PROGRAM MEETING  
WITH  
THE NUCLEAR REGULATORY COMMISSION  
FEBRUARY 5, 1996  
ATLANTA, GEORGIA**

ENCLOSURE 3

# Status of Corrective Action Plan

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- 46 of original 49 items are complete
- Those remaining open are:
  - » Procedure change process BPI
  - » I&C surveillance procedure revalidation
  - » QC holdpoints to witness points

# Status of Corrective Action Plan

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- 4 of 6 additional corrective actions complete (P. Beard letter of September 18, 1995)
- Those remaining open are:
  - » QPD surveillance of log practices
  - » Training on Shift Supervisor authority (C.A.P.S.)

# Key Personnel Assignments

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- Recent changes:
  - » Licensing and the Safety Assessment Team
    - Focus on operations
  - » System Engineering, Maintenance and Operations
    - Focus on operations
- Plant Review Committee:
  - » New SRO chairman and vice chairman
  - » Improved minutes
  - » Critical reviews
    - 50.59's and Corrective Actions

# Safety Assessment Team

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- Changed reporting level
  - » Reports to site VP
- Priority Objectives:
  - » Develop procedures
    - Conduct of Safety Assessment
    - Graded root cause/event reviews
  - » Provide oversight of station self assessments and EFO
  - » Increase use of PSA in routine plant and support activities
  - » Improve use and dissemination of operating experience

# Event Investigation

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- Root cause evaluation
- Revise method:
  - » Need a graded approach that starts at Level 1
  - » Considers use of peers and other independent expertise
  - » Designate members to ad-hoc team
  - » Develop reduced scope methods for lesser events
  - » Will request INPO reverse loanee to assist in program development and training



# Management Review Panel Status

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- Held approximately 10 to date
- Value added in each case:
  - » Opportunity for management to hear issues directly from the workers
  - » This added perspective has improved the corrective action plans
  - » Opportunity for management to reinforce expectations and test how they are understood in the field (also stress accountability)



# Long Range Plan and 1996 Annual Plan

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- Revised Vision statement
- Focus on four areas
  - » Human performance
  - » Regulatory performance
    - new performance indicators
  - » Plant performance
  - » Financial performance
- Emphasis on teamwork
- Reviews by FPC managers, NGRC members, and NRC project management

# Internal Communications

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- Improvements:
  - » Visit to other plants
  - » Single point contact
  - » Communications committee
    - POD summary
    - Newsletter
  - » New video system
    - Channel 3: corporate news
    - Channel 4: CR3 plan of the day and other Unit news
    - Channels 5-8: live outage activities in the RB

# Other Issues

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- Security Officers identifying plant problems:
  - » Vibrating piping
  - » Air flow from floor drain
- New Security Building Status
- Plant and people response to condenser tube leak
  - » Plant shutdown went well
  - » Operator response was good
  - » Requested INPO respond to prepare an SEN to industry

# Focus On Operations

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- Zack Pate's Speech  
Indicated a Clear Need For:
  - » Strong Supervision
  - » Teamwork
  - » Scheduling of Activities
  - » Conservative, Methodical  
Decision Making
  - » Crew Compositions
- Areas of Emphasis at CR-3

# Supervision

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- Identification with Management Principles
- Work Ethic and Values
- Actions
  - » Rewrote AI-500, Conduct of Operations
  - » SRO Supervisor overtime changed to salaried
- Planned
  - » Work Control Center for Control Room
  - » Additional Rotation of SRO's into the plant staff

# Teamwork

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- Consistency in Team plays
- Building Teamwork
  - » Operability process requires buy-in from 3 key departments, Lic, Eng, Ops
  - » Project Teams for modifications
  - » System Operator program
- Open Communications with Management
  - » 1994- 300 PCs, 1995- 3000 PCs, 1996-304 PCs already



# Scheduling of Activities

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- Adjusting shift compliments for peak work periods
  - » Work Controls Center
  - » Upcoming outage, A/B Shift for entire outage
    - 4 SROs per shift minimum
- Placed a 3rd SRO on day shift
- NSS reviews next weeks activities and plant status with crew during prior (requal) week

# Conservative, Methodical Decision Making

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Covered in Requal Training  
January and February, 1996

- Hastiness of decision making
- Use of Control Rods
  - » procedure changes already made in response to Salem event
- Procedure Use and Adequacy



# Crew Composition

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- Crews re-adjusted by NSS's January 1995
- Operations Instructions require a comprehensive re-adjustment every 4 years
  - » lead by the NSS's and facilitated by Operations Management
- Interim re-adjustments are made based on AI-501 observations

# Continuing Areas of Emphasis

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- Operability Determinations
  - » CP-150 issued end of 1995
  - » Written and issued with comments from NRR (Rags) and region comments
  - » Joint training with Eng, Lic, Ops
  - » 19 Operability Concerns Resolutions Completed
    - Conclusions
      - 11 Operable but degraded
      - 8 Fully Operable
  - » PRC Survey: input to first revision for lessons learned

# Examples of OCR's

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- Separation Criteria
- Transformer Cooling
- RB Sump (Grating issue)
- Events
  - » DHR Voiding of line
  - » Valves failing to operate as expected
  - » Leaks
- EOP Group findings-- design issues

# Continuing Areas of Emphasis

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- Administrative and Organizational Effectiveness
  - » Accuracy and timeliness of commitments and correspondence
  - » Licensing Staff focus on self-identification of issues

# Continuing Areas of Emphasis

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## ● Human Performance

» Working with St Lucie-sharing experience and EFO program

» Performance Verification

- Recent events demonstrate value

» Communication

– Management with NRC and internal

- consistency
- predictability

» Teamwork

# Continuing Areas of Emphasis

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- Human Performance (con't)
  - » Questioning Attitude
    - Several strengths identified in residents reports
    - Precursor cards show this is strong
    - Many deep design basis issues arise out of QA by engineers
    - Must continue to emphasize and nurture this culture

# Continuing Areas of Emphasis

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- **Sharing of Ideas and Resources**
  - » **Proactively Fighting Complacency**
    - Region II Plant and Operations Managers will address this in next meeting in August
    - Reactivity Changes: No such thing as a routine reactivity change



# Examples of Good Pre-Cursors Identified By Plant Organizations

## Operations

PR-96-0008 documents that decay heat cooler outlet must be used to determine RCS temperature and cooldown rates. SP-422 does not recognize the step change that occurs when swapping decay heat trains. If decay heat trains are swapped, cooler outlet will change by  $>20^\circ$  and be in excess of RCS cooldown rates allowed.

## Engineering

Freeze protection insulation missing from 4" DO supply line to the circulators and the 4" sewage lift line to the sewage treatment plant.

## Rad Waste

To decon the polar crane, use of the Dynalock inside the ladder cage with the lanyard in the back of the "D" ring creates a considerable drop if someone should fall.

## Chemistry

Condenser leak resulted in high chloride, 20 ppm, in secondary plant for about 60 hours at elevated temperature; need to evaluate impact on corrosion of secondary plant carbon steel piping and components.

A cursory review of the condensate tube rupture event on 1/9/96 has indicated that evaluation of conditions and actions taken by Chemistry did not result in a timely recognition of the severity of the conditions.

## Site Support

Radiological postings have been much improved, but minor posting and trash problems found on berm plus two Pepsi cans in MSB Green Is Clean container.

## Maintenance

White programming the low pressure Druck calibration for SP-167, observed the low range not working. All of our new procedures tie us to the Druck for calibration. What happens if four people need the Druck during the outage and one breaks and has to be sent back for repairs?



EOP Group

Calculation I86-0003, Rev. 6, determined that the allowable leakage of the DH and BS system phase of "A" LOCA has a design limit of 1.5 gallons per hour. CP-149, SP-412 both use values in excess of the design limits.

Calculation I86-003, Rev. 6 (1), RB spray runs for 30 days after LB-LOCA; (2) CREVs is running in ten minutes following a LB-LOCA. Existing procedures will not ensure these assumptions are met.

The current actuation setpoint for building spray is nominally 30 psig. The higher setpoint (30 psig) appears to only consider maximum RB pressure, but no evaluation has been found that considers off-site dose or dose to the control room.

# Engineering/Tech. Support

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- Event Free Operation Program
  - » Precursor Trends
- Communication/Teamwork Improvements
- REA Backlog Reduction Efforts

# Event Free Operation Program

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- Precursor Trends
  - » Trending of cards by cause code
  - » Trending by Supervisor
  - » Evaluation of adverse trends is required

PRECURSORS - EVENT FREE PROGRAM  
As of December 18, 1995

	WSK	MJF	AGW	MWD	PAD	WJB	RLM	JWC
EFO-1		95-1691 95-1714						
EFO-2	95-2316	95-1997 95-2057				95-2598		
EFO-3						95-1682		
EFO-4	95-1800		95-1704 95-1827 95-1865					
EFO-5	95-1844							
EFO-6	95-1907		95-1865 95-2030					
EFO-7			95-1773					
EFO-8			95-2034					95-2610
EFO-9								
EFO-10								
EFO-11			95-1505 95-1763 95-1778 95-1789					
EFO-12	95-2010 95-2570	95-1708	95-1451 95-1773 95-2148					

# Communication/Teamwork Improvements

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- Attending Operations turnover meetings
- Evaluating how to best integrate Engineers in Operator simulator training
- Effectiveness of Project Teams
- Operations contribution to calc. and mod. development
- Teamwork meetings
- Daily meeting - VP/Eng/Lic/SAT

# REA Backlog Reduction Efforts

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- Approximately 700 items backlogged
- Action Plan has been developed
- Management review has been initiated

# REA Backlog Reduction Efforts

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- Reviewing REAs during daily plant meeting
- Developing screening criteria for REAs
- Setting the expectation for direct communication & Management involvement

# Makeup Tank Calculation Status

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- 3rd Party review was performed (MPR)
  - » Results indicate that calc. methodology is correct
  - » Assumptions are appropriate
  - » Conservatism exists in the analytical curve
- Operating limits added to the analytical curve



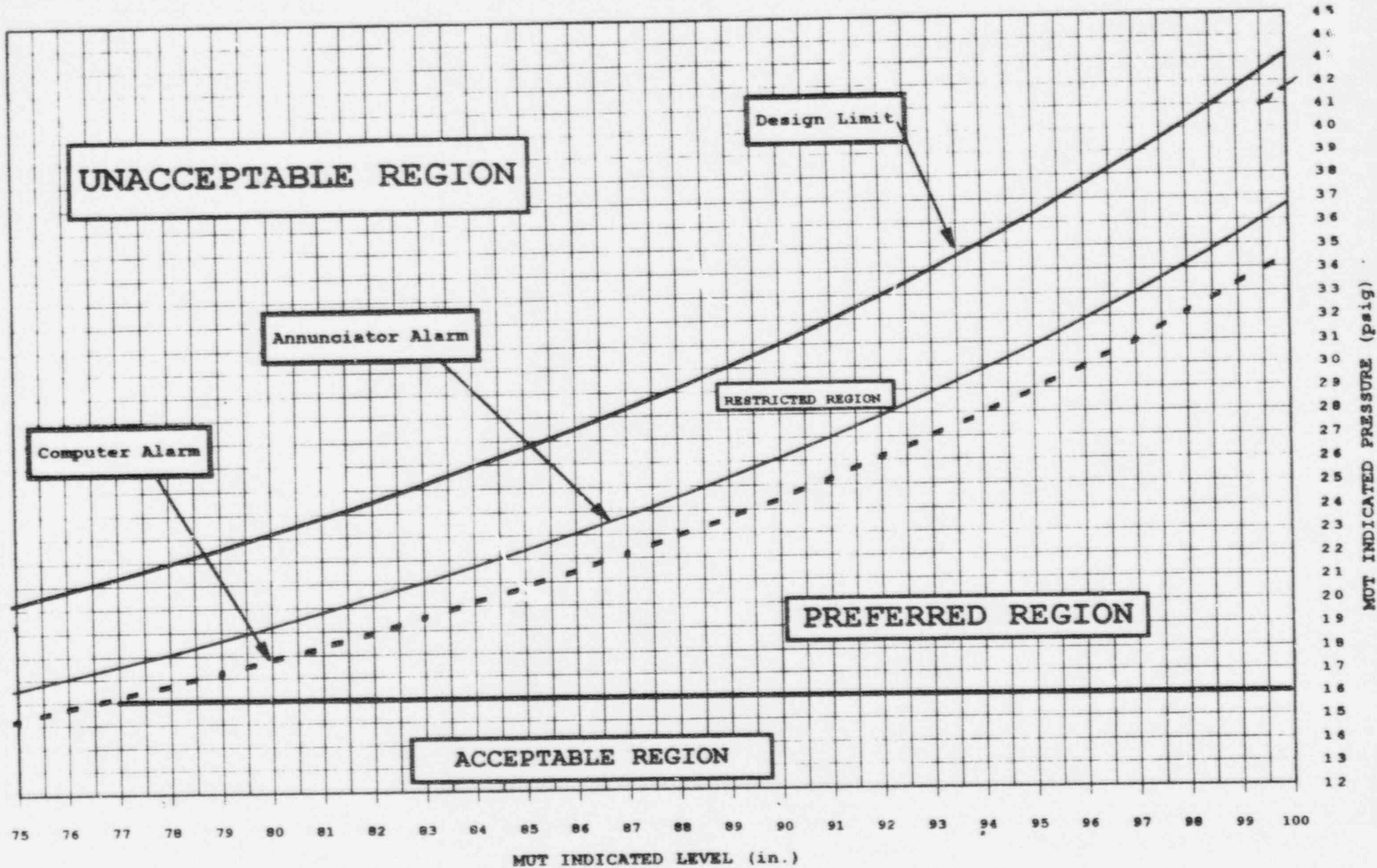
# Makeup Tank Calculation Status

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- Calculation revision in progress to address errors identified by NRC
  - » Design curve does not change
  - » Reflects flow values consistent with plant operating practices
- Responding to NRR questions on calc.

# MAX. MUT OPERATING PRESSURE vs LEVEL

Preferred Range



# Natural Gas Pipeline

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- Natural Gas line to CR units 1,2,&4
- Economic benefit to FPC
  - » Lower fuel cost than oil
  - » Units will remain online during low load periods
- Proposed 10" pipeline - north of CR#3
- CR#3 Eng. contacted to review feasibility study

# Natural Gas Pipeline

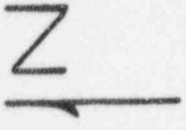
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- CR#3 Eng. PM Assigned
  - » Pipeline rerouted away from CR#3
- Evaluating the potential impact on CR#3
  - » Control Room Habitability
    - possible flammable concentrations
  - » Additional questions as to other impacts need to be addressed

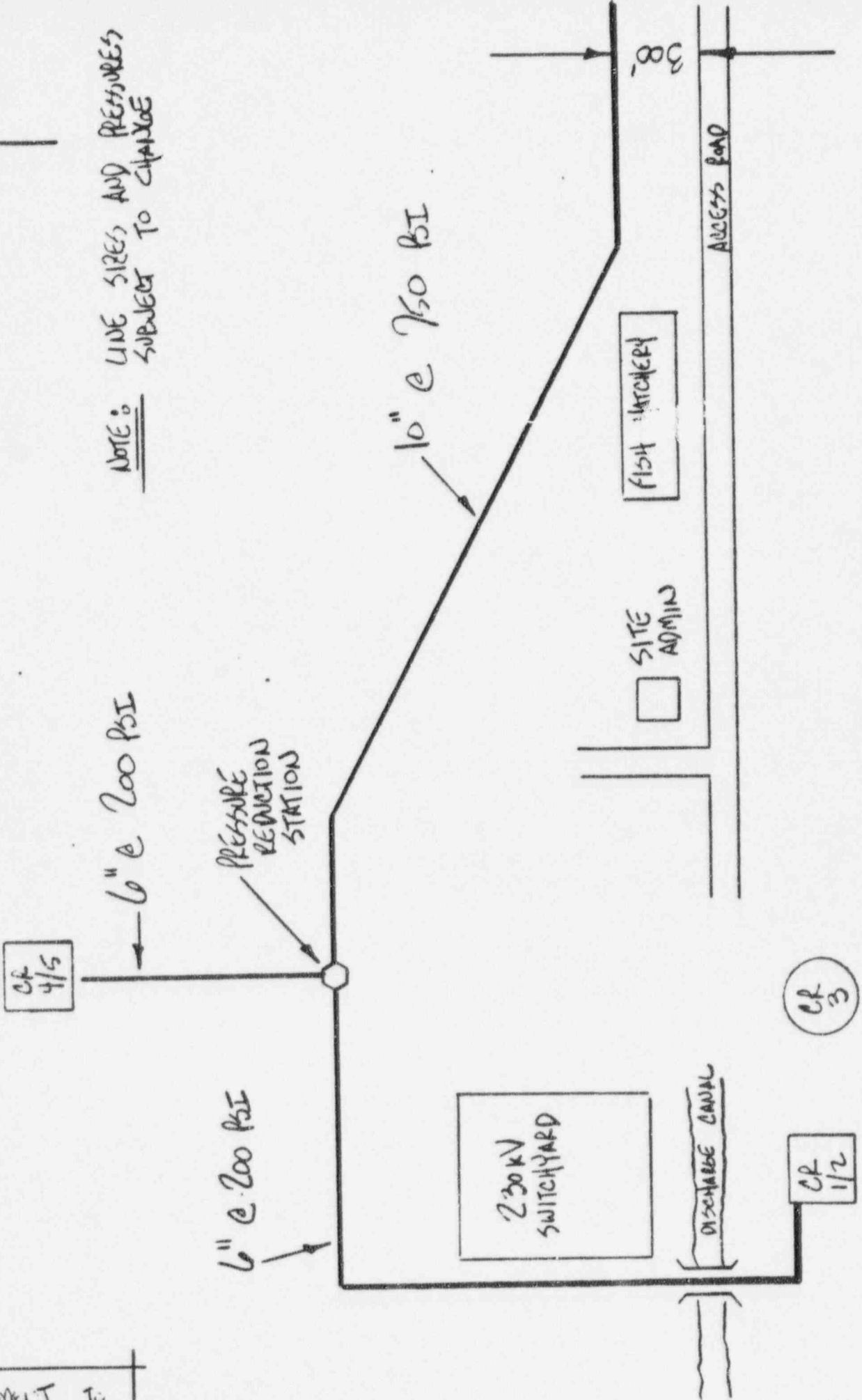
# Natural Gas Pipeline

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- CR#3 Project meeting held
  - » Communicate initial results
  - » Brainstorm other issues and solutions
  - » Contacting other plants which licensed gas pipelines
  - » Licensing issues identified
- Recommendation to defer Project being made to Corp.
- Requesting NRR input on issue



NOTE: LINE SIZES AND PRESSURES SUBJECT TO CHANGE



ATTACHMENT TO  
NEED TO COST

GAS PIPELINE SCHEMATIC LAYOUT



# INCREASED LICENSING RESOURCES

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- Changed Licensing Management
- Recognized need to provide more Licensing Management resource
- Divided the Licensing Group responsibility
- Changes provide focus on day-to-day operational issues and on longer term NRR issues



# WRITTEN CORRESPONDENCE IMPROVEMENTS

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- Changed responsibility assignments for LERs
- Total re-write of LER procedure
- Implemented checklist to improve consistency and capture lessons learned
- In-line review by the PRC Chairman
- Generic checklist for other correspondence

# NRC/FPC Communication

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- Improved Communication Plan has been implemented
- Establishes Management Expectations
- Stresses candor, thoroughness and clarity
- Result of feedback has been positive

ATTACHMENT 3  
LER CHECKLIST

<u>TITLE</u>	_____	<u>REFERENCE</u>
1. Cause	_____	NUREG 1022, .Supplemnt 2 pages 29,30
2. Result	_____	NUREG 1022, Supplemnt 2 pages 29,30
3. Link between cause and result	_____	NUREG 1022, Supplemnt 2 pages 29,30

<u>ABSTRACT</u>	_____	<u>REFERENCE</u>
1. 1400 Spaces - Max.	_____	NUREG 1022, PAGE 26 Attachment 7
2. Major Occurrences	_____	10 CFR 50.73 (b) (1)
3. Component Failures	_____	10 CFR 50.73 (b) (1)
4. System Failures	_____	10 CFR 50.73 (b) (1)
5. Causes	_____	NUREG 1022, Supplemnt 2 Page 17
6. Corrective Action	_____	10 CFR 50.73 (b) (1)
7. Corrective action to Preclude Recurrence	_____	10 CFR 50.73 (b) (1)
8. Operator Errors	_____	NUREG 1022, PAGE 26
9. Procedure Violations	_____	NUREG 1022, PAGE 26
10. Acronyms/Plant Specific Designators avoided or Explained	_____	SALP LER Review
11. Abstract does <u>not</u> contain info not found in text	_____	SALP LER Review

<u>TEXT</u>	<u>REFERENCE</u>
1. Plant conditions before Event (Mode Description)	50.73 (b)(2)(ii)(A) NUREG 1022, PAGE 26
2. Equipment status - If emergency features are disabled, were compensatory actions taken	50.73 (b)(2)(ii)(B) NUREG 1022, PAGE 26  SALP LER Review
3. Dates/Times of all Occurrences - Connection Between Event and Reportability dates	50.73 (b)(2)(ii)(C) NUREG 1022, Supp 1 Pages 21-24
3A. For Design Basis issues: -How was issue discovered Planned, proactive assess.	IOC PM95-0029
-Relative importance to safety of public	IOC PM95-0029
-Probability of occurrence	IOC PM95-0029
4. Cause of EACH Failure/error	50.73 (b)(2)(ii)(D)
5. Failure Mode Each Fail.	50.73 (b)(2)(ii)(E)
6. EIIS Codes for ALL Equip. Referenced	50.73 (b)(2)(ii)(F)
7. List of Affected Secondary Functions	50.73 (b)(2)(ii)(G)
8. Time Estimate - Discovery to Return to Service	50.73 (b)(2)(ii)(H)
9. Method of Discovery - Each Failure	50.73 (b)(2)(ii)(I)
10. Operator Actions	50.73 (b)(2)(ii)(J)
Were operator actions in accordance with the proced.	SALP LER Review
- For manual operations/ actuations, how do they compare to normal	SALP LER Review
	50.73 (b)(2)(ii)(J)

<u>TEXT</u>	<u>REFERENCE</u>
- For personnel errors, ID: Cognitive error _____	50.73 (b)(2)(ii)(J)
Procedural error _____	50.73 (b)(2)(ii)(J)
Work Location Contrib. _____	50.73 (b)(2)(ii)(J)
Type of Personnel _____	50.73 (b)(2)(ii)(J)
11. Safety Systems Actuated _____	50.73 (b)(2)(ii)(K)
- Were actuations expected for plant conditions _____	SALP LER Review
11A. Probabilistic Safety Assess. _____	Contact Nuc. Fuel Mgmt & Safety Assessment Dept
- Core Damage Frequency _____	See above
- Probability of occurrence _____	See Above
- PSAM Risk Monitor _____	See Above
12. Manufacturer & Model # for All Failed Equipment _____	70.73(b)(2)(ii)(L)
13. Safety Assessment _____	50.73 (b)(3)
- Consequences of event under different initial conditions _____	NUREG 1022 Page 19 Supplem. 1 Page 19 SALP LER Review
14. Availability of other Systems/components _____	50.73 (b)(3)
15. Corrective Action for ALL Problems _____	50.73 (b)(4)
16. Corrective action to preclude recurrence for ALL problems _____	50.73 (b)(4)
17. Previous similar events _____	50.73 (b)(5), NUREG 1022 Supple 1 page 20
18. Would a drawing help _____	NL-09 Attachment 4.
19. Acronyms/plant specific Designators spelled out or explained _____	SALP LER Review

# Regulatory Performance Index

<u>Indicator</u>	<u>Number</u>	<u>Multiplier</u>	<u>Weight</u>	<u>Total</u>
Automatic Scrams while Critical	0	4	0.3	1.2 - 0.0
	1	3		
	2	2		
	3	1		
	>3	0		
Safety System Actuations	0	4	0.2	0.8 - 0.0
	1	3		
	2	2		
	3	1		
	>3	0		
Significant Events	0	4	0.3	1.2 - 0.0
	1	3		
	2	2		
	3	1		
	>3	0		
Safety System Failures	0	4	0.25	1.0 - 0.0
	1	3		
	2	2		
	3	1		
	>3	0		
Forced Outage Rate	1st Quartile	4	0.15	0.6 - 0.15
	2nd Quartile	3		
	3rd Quartile	2		
	4th Quartile	1		

# Regulatory Performance Index

Radiation Exposure	1st Quartile	4	0.25	1.0 - 0.25
	2nd Quartile	3		
	3rd Quartile	2		
	4th Quartile	1		
<u>Non-Cited Total Violations</u>	1st Quartile	4	0.30	1.2 - 0.3
	2nd Quartile	3		
	3rd Quartile	2		
	4th Quartile	1		
<u>Strengths Strengths + Weaknesses</u>	1st Quartile	4	0.20	0.8 - 0.2
	2nd Quartile	3		
	3rd Quartile	2		
	4th Quartile	1		
Number of LERs	$0 \leq x < 5$	4	0.25	1.0 - 0.0
	$5 \leq x < 10$	3		
	$10 \leq x < 15$	2		
	$15 \leq x < 20$	1		
	$x \geq 20$	0		
<u>NOTES</u>	$100\% \geq x > 97\%$	4	0.15	0.6 - 0.15
Items Completed on Time	$97\% \geq x > 94\%$	3		
	$94\% \geq x > 91\%$	2		
	$91\% \geq x$	1		
<b>TOTAL</b>				<b>10.0 - 1.2</b>



# Setpoint Program Status

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- Program is 36% complete
  - » 4 calculations in final review
  - » 2 calculations are through verification and supervisor review
  - » 1 calculation has been issued
- Baseline schedule projects program should be 38% complete
- Program completion date unchanged

# Setpoint Program Status

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- Variance between baseline and present status
  - » Rosemount Part 21
    - Two calculations affected
    - Revisions required to support 10R procedure revisions
    - Two verifiers occupied by this issue
      - Design complete, both calculations are in verification

# Setpoint Program Status

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- Variance between baseline and present status (con't)
  - » Delays in calculation reviews
    - Condenser tube leak outage
      - Repairs complete, plant on line
    - Cross discipline/departments reviews required
      - Emphasis placed on quality but timely reviews
      - Reviews targeted for completion this week

# Setpoint Program Status

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- Variance between baseline and present status (con't)
  - » Verification time
    - More design engineers than verification engineers
    - Calculations are detailed and complicated
    - Verifications are being done thoroughly to ensure consistency and correctness
      - 5th verifier added to project
      - Periodic meetings to establish expectations and methodologies to improve design phase

# Positive Results

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- Rosemount Part 21
  - » Affect on plant assessed in several hours
  - » Reduced time to revise calculation
- Relationship between calculations and procedures strengthened
  - » Teamwork between Procedure writers and Engineers
  - » Calculations are truly developmental references for procedures

# Positive Results

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- Administrative Instructions are being revised to capture calc./proc. relationship
- Design inputs, assumptions, results and conclusions are reviewed by Operations, Licensing, Training and Engineering prior to issuance
- Culture is changing, all the way down to implementation in the field
- Maintaining expertise in house



# What's Ahead

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- A Graded Approach is in development to apply appropriate rigor for applications under consideration
- Revision of I&C Design Criteria
  - » Capturing lessons learned
  - » Injecting consistency
  - » Refining methodology
- Continued teamwork in calculation development and results implementation



# Control Complex Habitability Envelope (C.C.H.E.)

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- Action Plan
  - » 72 Action Items / 85% Complete
- Maintain Leak Tight Integrity
  - » Doors
  - » Dampers
  - » Penetrations
- Reduce SO<sub>2</sub> Threat
- Improve Designs and Hardware
- Update Calculations

# C.C.H.E. Doors

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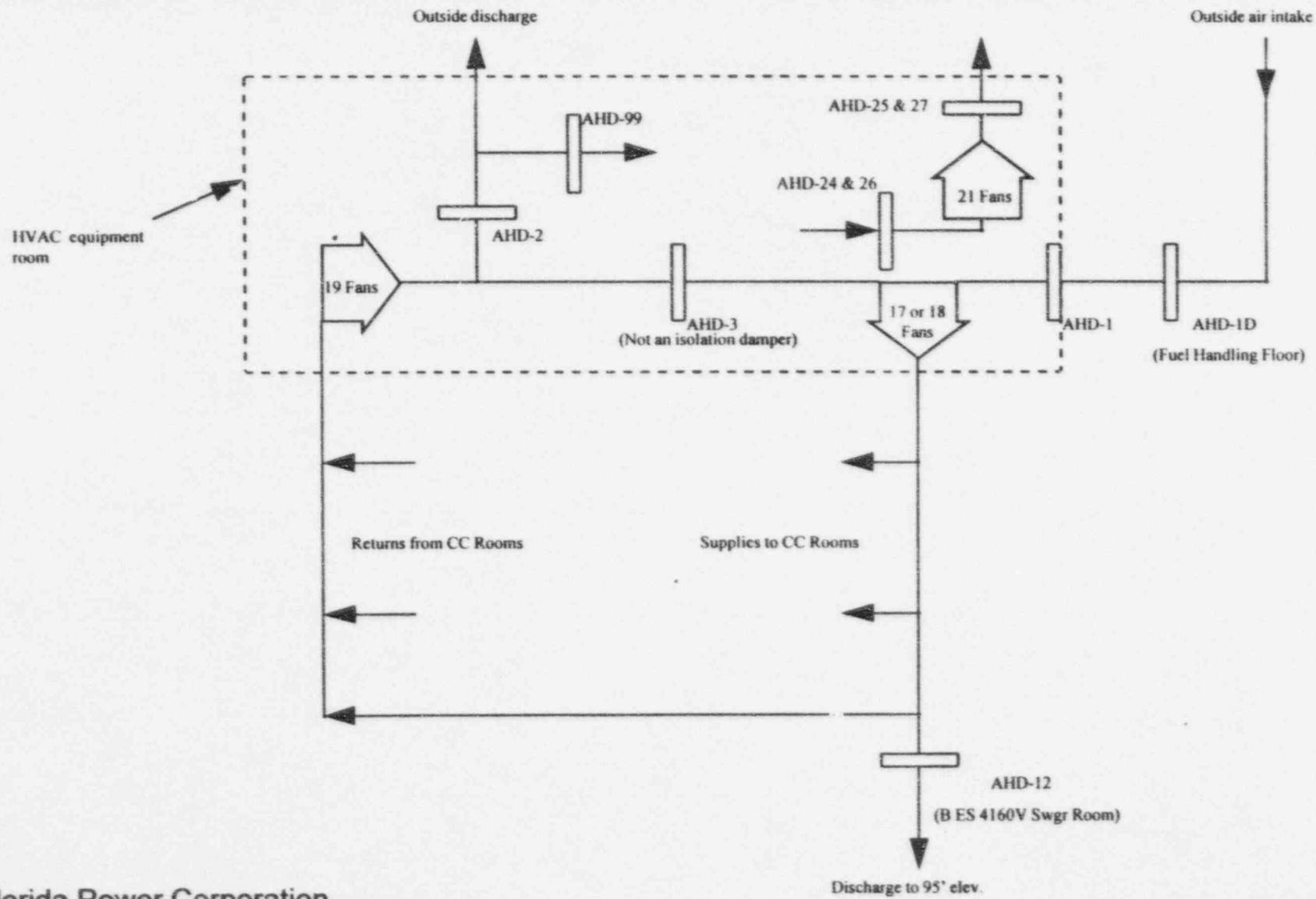
- Reduced Traffic
  - » Locked Entrance Doors
  - » Restricted Use of Elevators
- Replaced Old Double Doors
  - » Old Doors at End of Life
  - » New Doors Tested for Leakage
  - » Contracted an Expert Installer
- Established Door Inspection Every 120 Days
- Roving Fire Watches Observe Doors

# Damper Leakage Integrity Inspection

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- Challenges
  - » Accuracy of Drawings and Vendor Information
  - » Identification of Spare Parts
- Performance
  - » 2 Dampers Inspected On Line
  - » 4 Dampers Inspected During Forced Outage
    - 2 Problems Found and Corrected
  - » One damper in Each Leakage Path Inspected - Satisfactory
  - » Inspect Remaining Dampers in Refueling Outage

# Control Complex Isolation Dampers



# C.C.H.E. Penetrations

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- New Procedure to Authorize and Track Breaches
  - » Immediate Notification to CR
- Identified Floor Drains as a Leak Path
  - » PM to Replenish Water in Drain Traps Monthly
  - » Identified by Security Officer
- Revised Procedures Relating to Penetrations

# Reduce SO<sub>2</sub> Threat

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- Negotiated Reduction in SO<sub>2</sub> Stored at CR 1 & 2
  - » Reduced Maximum Control Room SO<sub>2</sub> Concentration
- Improved Coordination and Communication Between Units
  - » Notification of CR-3 Control Room During Deliveries
  - » Control Complex Ventilation System on Recirculation



# Improve Designs and Hardware

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- Object: Reduce Known Leakage Paths
- Evaluate Alternate Door Designs
  - » Double Doors with Center Posts
  - » Vestibule Enclosures
  - » Single VS Double Doors
- Review Control Complex Ventilation Design
  - » Bubble Tight Dampers
  - » Flow Requirements VS. Damper Size



# Update Calculations

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- Current Licensed Basis Relies on Older Models and Data
- Areas of Potential Improvement
  - » Revised Source Term
  - » ARCON95 Airborne Material Transport
  - » ICRP 30 Dose Conversion Factors
  - » Revised 10CFR20 Organ Dose Equivalents
  - » Improved Leakage for New Components
- NRR Participation Required