

September 17, 1992

Docket No. 50-302

LICENSEE: Florida Power Corporation (FPC)  
FACILITY: Crystal River, Unit 3 (CR-3)  
SUBJECT: SUMMARY OF AUGUST 13, 1992, FPC/NRC MEETING  
ON PROCUREMENT INSPECTION AT CR-3

On August 13, 1992, the NRC staff met with representatives of FPC and other interested industry representatives at One White Flint North, Rockville, Maryland, to discuss plant specifics, policy, and generic implications of the recent vendor procurement inspection (March 23-27, 1992) related to non-safety grade equipment for safety-grade applications. Meeting attendees are listed in Enclosure 1. The agenda for the meeting is provided in Enclosure 2.

FPC expressed disagreement with some of the conclusions of Report No. 50-302/92-201, which was transmitted to the licensee on July 2, 1992. Also, the licensee stated that certain issues raised in the report reflect generic issues that need future dialogue between NRC and the nuclear industry. Enclosure 3 (Sheets 1-35) provides the information presented by FPC addressing the following: Purpose of Meeting, Basic Conclusions, Report Completeness, Compliance with Licensing Basis, Issues, Previous Inspection Issues, and Discussion of Sixteen Inspection Packages. Enclosure 4 (Sheets 1-25) provides FPC's preliminary comments on NRC-identified Inspection 92-201 packages.

The licensee requested that the staff reconsider their conclusions stated in Inspection Report No. 50-302/92-201. FPC indicated that they will provide in the near future a written reply addressing the staff conclusions. The discussions helped to identify the areas requiring further resolution. Finally, it was agreed that more interaction between the staff and various licensees is needed to address this generic industry-wide vendor procurement issue, prior to the upcoming NRC-NIMARC sponsored workshop scheduled for fall 1992 in Rockville, Maryland.

(Original Signed By)

Frank Rinaldi, Project Engineer  
Project Directorate II-2  
Division of Reactor Projects - I/II  
Office of Nuclear Reactor Regulation

Enclosures:

1. Meeting Attendees
2. Agenda
3. Sheets 1-35
4. Sheets 1-25

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See next page

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PE:PDII-2  
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## ATTENDANCE LIST

AUGUST 13, 1992

MTG W/FPC ON PROCUREMENT INSPECTION CR-3

<u>NAME</u>	<u>ORGANIZATION</u>
Frank Rinaldi	NRC/NRR PDII-2
Herbert Berkow	NRC/NRR PDII-2
Rich McIntyre	NRC/DRIS/VIB
Jeff Norrholm	NRC/DRIS/VIB
Idis Potapovs	NRC/DRIS/VIB
Ken Wilson	FPC
Pat Beard	FPC
Brian Grimes	NRC/DRIS/NRR
Steven Varga	NRR/DRPE
Thomas Hicks	STS/INC
Bill Rasin	NUMARC
Kim Barrett	Bechtel
Thomas McKenzie	NRC/RII
Richard Lobel	NRC/OEDO
Chris VanDenburgh	NRC/OE
William Troskoski	NRC/OE
Robert Pettis	NRR/VIB
David Jones	CPCO/NUPIC
Gus Lainas	NRC/NRR
Narvaez Stinson	NRC/NRR PDII-2
Earl Welch	FPC
Alex Marion	NUMARC
Perry Robinson	Winston/Strawn
Paul Tanguay	FPC
Bill Conklin	FPC
Tim Catchpole	FPC

FPC/NRC PROCUREMENT MEETING  
AUGUST 13, 1992

- I. INTRODUCTION PAT BEARD
  - A. PURPOSES OF MEETING
  - B. BASIC CONCLUSIONS
- II. MANAGEMENT OVERVIEW KEN WILSON
  - A. REPORT COMPLETENESS
    - 1. INTRODUCTION
    - 2. SELF-ASSESSMENTS
    - 3. SAMPLE SELECTION
    - 4. NP&SM REVISION
  - B. COMPLIANCE WITH LICENSING BASIS
    - 1. CR-3 LICENSING BASIS
    - 2. COMPLIANCE WITH APPLICABLE REQUIREMENTS/INITIATIVES
    - 3. BACKFIT CONSIDERATIONS (BRIEF SUMMARY)
  - C. ISSUES
    - 1. PLANT-SPECIFIC TECHNICAL ISSUES
    - 2. PROGRAMMATIC ISSUES
    - 3. GENERIC ISSUES
  - D. PREVIOUS INSPECTION ISSUES
  - E. CONCLUSION
- III. DETAILED DISCUSSION OF EACH PACKAGE KEN WILSON

[FPC WILL BE PREPARED TO DISCUSS EACH PACKAGE AS WELL AS LEAVING SLIDES AND ADDITIONAL DETAILS ON EACH PACKAGE]

Meeting Summary Dated September 17, 1992

DISTRIBUTION

Docket File

NRC & Local PDRs

PDII-2 RF

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J. Partlow

S. Varga

G. Lainas

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H. Berkow

D. Miller

N. Stinson

L. Norrholm, 9-D-4

U. Potapovs, 9-D-4

R. Pettis, 9-D-4

B. Grimes

R. Lobel, 17-G-21

C. VanDenburgh, 7-H-5

W. Troskoski, 7-H-5

E. Jordan, MNBB, 3701

M. Sinkule, RII

T. McKenzie, RII

OGC

ACRS (10)

## PURPOSE OF MEETING

- FPC DOES NOT BELIEVE THE REPORT ACCURATELY REPRESENTS THE EFFECTIVENESS OF OUR PROCUREMENT PROGRAM. THEREFORE, FPC WANTED TO CLARIFY THE RECORD PRIOR TO THE REPORT BEING TRANSMITTED TO THE REGION FOR FURTHER DISPOSITION.
- FPC BELIEVES THE DISCUSSION OF PREVIOUS INSPECTION FINDINGS WAS INAPPROPRIATE AND WARRANTS SIGNIFICANT CLARIFICATION.
- COVER LETTER TO INSPECTION REPORT REQUESTED FPC TO:  

"...MAKE AN ASSESSMENT OF THE SAFETY IMPLICATIONS THAT THESE DEFICIENCIES COULD HAVE AND TAKE APPROPRIATE CORRECTIVE ACTIONS BASED ON YOUR REVIEW OF THE INFORMATION CONTAINED IN THIS REPORT."
- FPC BELIEVES THAT CERTAIN ISSUES RAISED IN THIS REPORT REFLECT GENERIC ISSUES THAT REMAIN OPEN BECAUSE THE NRC'S EXPECTATIONS EXCEED THE COMPREHENSIVE PROCUREMENT INITIATIVE. THUS, THIS MEETING WILL BE A USEFUL PRECURSOR TO FUTURE NRC/INDUSTRY DIALOGUE ON THESE ISSUES.

## BASIC CONCLUSIONS

- THE PACKAGES QUESTIONED BY THE TEAM IN THE SUBJECT REPORT DO NOT CONTAIN 'DEFICIENCIES' WITH SAFETY IMPLICATIONS.
- PARTS QUESTIONED ARE NOT OF 'IN' TERMINATE QUALITY.' WE HAVE REASONABLE ASSURANCE THAT THE PARTS RECEIVED WERE THE PARTS SPECIFIED AND THAT THEY WILL FUNCTION APPROPRIATELY.
- ACTIONS IN RESPONSE TO THE PREVIOUS INSPECTION EXCEEDED THAT WHICH WAS REQUIRED. WE MET OUR GENERAL OBLIGATIONS UNDER APPENDIX B AND ALL OF OUR COMMITMENTS. INSTEAD OF FOCUSING ON THOSE ACTIONS WE COMMITTED TO DO, THE TEAM REVIEWED THE REPLACEMENT STATUS OF THINGS WE HAD NOT COMMITTED TO REPLACE.
- FPC AGREES THAT THE LEVEL OF OBJECTIVE EVIDENCE AND PROCEDURAL GUIDANCE IN CERTAIN AREAS COULD BE IMPROVED AND WAS MOVING IN THAT DIRECTION PRIOR TO THE ANNOUNCEMENT OF THE INSPECTION.
- THE NRC AND THE INDUSTRY FUNDAMENTALLY DISAGREE ON WHAT IS MEANT BY AND REQUIRED TO ACHIEVE 'REASONABLE ASSURANCE.' WE UNDERSTAND THE NRC'S POSITION, BUT DO NOT AGREE WITH IT.

## REPORT COMPLETENESS

- INTRODUCTION
- SELF ASSESSMENTS
  - CYGNA
  - INTERNAL FPC ASSESSMENT
  - NRC SELECTED PACKAGES
- SAMPLE SELECTION
- NUCLEAR PROCUREMENT AND STORAGE MANUAL REVISION



## FPC/CR-3 LICENSING BASIS

- THE FPC QA PROGRAM, INCLUDING REQUIREMENTS APPLICABLE TO PROCUREMENT, IS CONTAINED IN CHAPTER 1.7 OF THE CR-3 FSAR. THE PROGRAM ADOPTS REGULATORY GUIDE 1.33 (REVISION 2, 1978) [WHICH IS THE NRC'S CONDITIONAL ENDORSEMENT OF ANSI N18.7/ANS 3.2 (1976)] WITH SOME CLARIFICATIONS.
- FPC EXPRESSLY COMMITTED TO UPGRADING OUR PROGRAM TO MEET THE EPRI CGI GUIDELINES. THE INDUSTRY COMMITTED, VIA NUMARC INITIATIVE, TO UPGRADE PROCUREMENT PRACTICES TO MEET THE INTENT OF THE EPRI GUIDELINES.
- FPC HAS NEVER COMMITTED TO MEET THE STAFF'S INTERPRETATIONS OF THESE GUIDELINES AS EXPRESSED IN GL 89-02 OR 91-05. IN FACT, AT EVERY REASONABLE OPPORTUNITY FPC HAS STATED OUR VIEW THAT THESE DOCUMENTS REPRESENT NEW STAFF POSITIONS.
- FPC BELIEVES THAT OUR CURRENT LICENSING BASIS REMAINS REASONABLE ASSURANCE THAT THE PART RECEIVED IS THE PART SPECIFIED.

- NEVERTHELESS, FPC DOES SPECIFY REPLACEMENT PARTS THAT ARE EXPECTED TO HAVE THE CAPABILITY TO FULFILL ALL THEIR SAFETY FUNCTIONS. THAT CAN RESULT FROM:
  - SELECTING LIKE-FOR-LIKE REPLACEMENT PARTS (NOT AS GL 91-05 WOULD DEFINE SUCH);
  - EQUIVALENT PARTS (FPC'S PEERE PROCESS); OR,
  - BY PERFORMING A DETAILED SAFETY ASSESSMENT AND VALIDATING SUFFICIENT CHARACTERISTICS TO GAIN REASONABLE ASSURANCE OF FUNCTIONAL CAPABILITY.
- REGARDLESS OF HOW THE PART IS SPECIFIED OR PROCURED, FPC MAY CHOOSE TO VALIDATE CHARACTERISTICS BEYOND THOSE NEEDED FOR ACCEPTANCE FOR A VARIETY OF REASONS.

## COMPLIANCE WITH APPLICABLE REQUIREMENTS/INITIATIVES

- WITH MINOR EXCEPTIONS, THE PACKAGES REVIEWED IN 1989 AND 1992 WERE IN COMPLIANCE WITH OUR MANUAL AND PROCEDURES AT THE TIME THE PACKAGES WERE DEVELOPED.
- THE PACKAGES WERE IN COMPLIANCE WITH OUR LICENSING BASIS (10 CFR 50, APPENDIX B AS INTERPRETED BY OUR QA PLAN'S CONDITIONAL ENDORSEMENT OF RG 1.33).
- THE PACKAGES IDENTIFIED IN THE 1992 INSPECTION WERE IN COMPLIANCE WITH THE NUMARC INITIATIVE (THE INTENT OF THE EPRI CGI GUIDELINES).
- WE AGREE THAT SEVERAL OF THE PACKAGES WERE NOT IN COMPLIANCE WITH EVOLVING STAFF GUIDANCE COMMUNICATED TO THE INDUSTRY IN GL 91-05.

## BACKFIT CONSIDERATIONS

- WE DO NOT PLAN ON CONDUCTING A THOROUGH BACKFIT APPEAL AT THIS TIME. HOWEVER, IT IS NECESSARY TO COMMUNICATE SOME FUNDAMENTAL ISSUES.
- NON-COMPLIANCE WITH THE POSITIONS EXPRESSED IN GL 91-05, OR OTHER EVOLVING STAFF POSITIONS, DOES NOT NECESSARILY RESULT IN A PART OF INDETERMINATE QUALITY.
- GL 91-05, AND BOTH OF OUR INSPECTION REPORTS, CONTAIN SEVERAL POSITIONS THAT HAVE NEVER PROPERLY BEEN MADE A PART OF OUR APPLICABLE LICENSING BASIS.
- FPC IS AWARE OF THE DIALOGUE WITH CRGR, NUMARC AND NUBARG ON THIS SUBJECT, BUT STRONGLY BELIEVES THAT THE ISSUE HAS NOT BEEN FULLY EXPLORED OR RESOLVED. WE CONSIDER RESOLUTION OF THIS TO BE A NECESSARY PREDECESSOR TO (OR COMPONENT OF) GENERIC DISCUSSIONS SCHEDULED TO OCCUR THIS FALL.
- THE BASIC ISSUE IS WHETHER CONFORMANCE WITH THE EXISTING CONSENSUS STANDARD (ANSI N18.7/ANS 3.2) AS CONDITIONALLY ENDORSED BY RG 1.33, REVISION 2 AND OUR QA PLAN IS SUFFICIENT TO MEET APPENDIX B. THE CONTINUED RELIANCE ON THE REG GUIDE, ITS STATED COMPLIANCE WITH APPENDIX B, THE APPROVAL OF OUR QA PROGRAM IN THE MID-1980'S, ALL LEAD US TO BELIEVE THAT THEY REMAIN OUR LICENSING BASIS.
- IF THE NRC WANTED US TO CHANGE OUR LICENSING BASIS, GL 91-05 SHOULD HAVE SUPPORTED THIS CHANGE IN POSITION WITH AN APPROPRIATE VALUE/IMPACT ASSESSMENT AND REQUIRED A RESPONSE WHICH WOULD HAVE INCLUDED A PROPOSED REVISION TO OUR (AND ALL LICENSEE'S) QA PLAN.

## PLANT SPECIFIC TECHNICAL ISSUES

THE FOLLOWING PLANT-SPECIFIC TECHNICAL ISSUES APPEAR IN ONE OR MORE OF THE NOTED PACKAGES (SOME OF THESE MAY BE GENERIC BUT APPEAR IN A SUFFICIENTLY UNIQUE LIGHT TO WARRANT TREATMENT ON A PLANT-SPECIFIC BASIS):

### CONSIDERATION OF EFFECTS OF POTENTIAL FAILURES ON NEARBY EQUIPMENT

COMMENTS WERE MADE THAT IMPLIED THAT THE NRC EXPECTED US TO CONSIDER THE EFFECT OF COMPONENT FAILURES ON NEARBY EQUIPMENT. THAT IS OUTSIDE OF THE LICENSING BASIS OF PLANTS OF OUR VINTAGE. WE ADDRESS LINE FAILURES AS REQUIRED BY OUR HELB PROGRAM. SYSTEMS LEVEL INTERACTIONS WERE ADDRESSED BY THE STAFF IN USI A-47 (GL 89-19). SPATIAL INTERACTIONS DURING SEISMIC EVENTS WILL BE ADDRESSED AS PART OF THE RESOLUTION OF A-46. THERE IS NO EXPLICIT REQUIREMENT FOR SUB-COMPONENT LEVEL INTERACTION ANALYSES.

### DESCRIPTIONS, IDENTIFICATION OF SAFETY FUNCTION, & EQ ZONES

FPC'S ENTIRE DESIGN CONTROL/CONFIGURATION MANAGEMENT PROGRAM IS DRIVEN BY A DISCRETE TAG NUMBER SYSTEM. USERS OF OUR VARIOUS QA DOCUMENTS (PROCUREMENT AND OTHERWISE) HAVE ACCESS TO TENS OF THOUSANDS OF RECORDS VIA LARGE COMPUTER DATA BASES (PRINCIPALLY CMIS AND FIMIS FOR PROCUREMENT). WE DISCOURAGE REPLICATION OF THAT INFORMATION ON THE MANY DOZENS OF HARD COPY FORMS WE UTILIZE IN THIS AND OTHER QA ACTIVITIES SINCE EACH TRANSLATION TENDS TO DEPART FROM THE ACTUAL DESIGN BASIS. SEVERAL COMMENTS APPEARED, AT LEAST PARTIALLY, BASED ON THE TEAM'S MISUNDERSTANDING THIS INFORMATION MANAGEMENT NETWORK. FOR INSTANCE, CMIS ALSO SERVES AS OUR EQML AND AS SUCH ALL THE APPLICABLE ZONE INFORMATION, QUALIFICATION REFERENCES, ETC. ARE READILY AVAILABLE IN A SERIES OF TAG NUMBER RELATED COMPUTER SCREENS.

## SEISMIC SIGNIFICANCE

MUCH OF THE TEAM'S CONCERNS ASSOCIATED WITH DESIGN AND MATERIAL CONTROL SEEMED TO FIND ITS SAFETY BASIS IN SEISMIC QUALIFICATION CONCERNS. NOW THAT THE NRC HAS ISSUED THE SSER ON SQUG AS ONE MEANS OF RESOLVING GSI A-46 IT WOULD APPEAR APPROPRIATE TO DE-EMPHASIZE THE LEVEL OF CONCERN IN THIS AREA. THE SSER EXPRESSLY STATES:

"THESE CRITERIA AND PROCEDURES AS DESCRIBED ARE ACCEPTABLE FOR VERIFYING THE SEISMIC ADEQUACY OF COMMERCIAL-GRADE EQUIPMENT TO BE DEDICATED FOR SAFETY-RELATED PURPOSES."

## PROGRAMMATIC ISSUES

THE FOLLOWING ISSUES GENERALLY REFLECT THE CONCERNS GROUPED IN THE SECOND DEFICIENCY IN THE REPORT. WHILE THESE ARE IN A PLANT-SPECIFIC CONTEXT, THEY ARE GENERIC ISSUES:

### FEEDBACK/OVERVIEW BETWEEN PE, PQA AND INSPECTORS

FPC DOES NOT AGREE THAT ORGANIZATION IS INAPPROPRIATE, BUT AGREES THAT PROCESSES NEED TO BE STRENGTHENED SOMEWHAT. INTERIM ACTIONS (CHECKLIST FOR PQA REVIEW OF SOURCE INSPECTION REPORTS, PROCEDURAL CLARIFICATIONS, ETC) HAVE ALREADY BEEN TAKEN. FURTHER ENHANCEMENTS AND REFINEMENTS ARE LIKELY.

### LEVEL OF DETAIL IN SOURCE INSPECTION REPORTS

FPC DOES NOT AGREE THAT THE LEVEL OF OBJECTIVE EVIDENCE IS 'INADEQUATE.' UNLIKE EQ 'VENDOR QUALIFICATION PACKAGES', IT WAS NOT OUR INTENT (AND WE DON'T BELIEVE WE ARE REQUIRED) TO BE ABLE TO INDEPENDENTLY VERIFY THE INSPECTORS BASIS OR RESULTS. HOWEVER, WE DO AGREE THAT THE DISCIPLINE IMPOSED BY IMPROVED DOCUMENTATION MIGHT IMPROVE INSPECTIONS AND FACILITATE REVIEW AND AUDIT ACTIVITIES.

### PROCEDURAL GUIDANCE

BASED ON OUR EXPERIENCE IN THIS AND MANY RELATED ACTIVITIES, WE DO NOT AGREE THAT PROCEDURAL DETAIL IS THE BEST WAY TO ACHIEVE IMPROVED PERFORMANCE OR CONSISTENCY. ACCOUNTABILITY IS OFTEN REDUCED WHEN PROCEDURES BECOME TOO 'COOKBOOK' AND COMPLIANCE BECOMES MORE IMPORTANT THAN PERFORMANCE.

## GENERIC ISSUES

### SUITABILITY OF APPLICATION/CRITICAL CHARACTERISTICS

THIS IS THE MOST IMPORTANT AND FUNDAMENTAL ISSUE FACING FPC AND THE INDUSTRY IN GENERAL. IT CAN BE SUMMARIZED AS SHOWN ON THE ATTACHED FIGURE AND ASSOCIATED NOTES. ALTERNATIVELY, THE QUESTION CAN BE STATED AS:

IS IT NECESSARY TO IDENTIFY AND VALIDATE ALL CRITICAL CHARACTERISTICS RELATED TO A COMPONENTS SAFETY FUNCTION; OR, IS THERE A SUBSET OF CHARACTERISTICS NECESSARY AND SUFFICIENT FOR ACCEPTANCE?

FPC AND THE INDUSTRY BELIEVES ONE CAN IDENTIFY A SET OF CHARACTERISTICS TO ACHIEVE DEMONSTRATION OF SUITABILITY FOR APPLICATION WITHOUT VALIDATING ALL THOSE ASSOCIATED WITH SAFETY FUNCTION. BOTH THE NRC AND THE INDUSTRY AGREE THAT NOT ALL THOSE ASSOCIATED WITH A COMPONENTS DESIGN MUST BE VALIDATED.

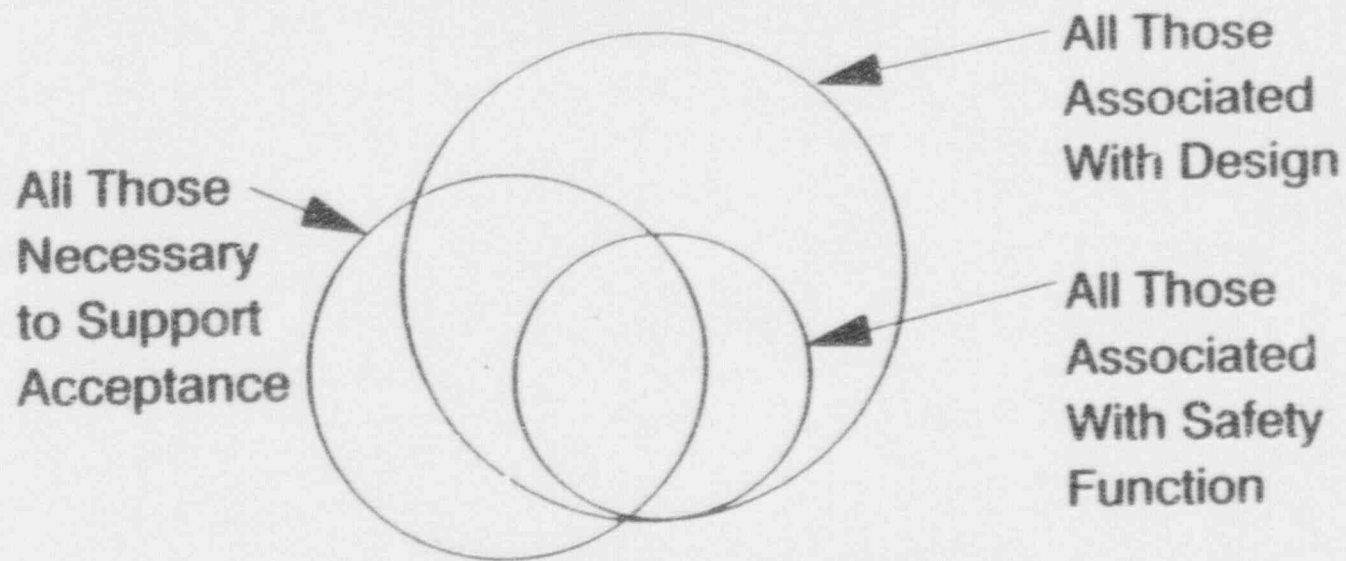
### SOURCE INSPECTION RESULTS

A SIGNIFICANT ISSUE AT FPC, WHICH AFFECTS THE INDUSTRY TO THE EXTENT THAT SOURCE INSPECTIONS ARE RELIED UPON, IS WHETHER QUALIFIED INSPECTORS CAN BE RELIED UPON TO ACCOMPLISH THOSE REVIEWS ESSENTIAL TO VALIDATE A CHARACTERISTIC OR IS IT NECESSARY FOR OTHERS (THE LICENSEE, NRC OR OTHERS) TO BE ABLE TO INDEPENDENTLY VALIDATE THAT THE ACTIONS TAKEN ARE NECESSARY AND SUFFICIENT.

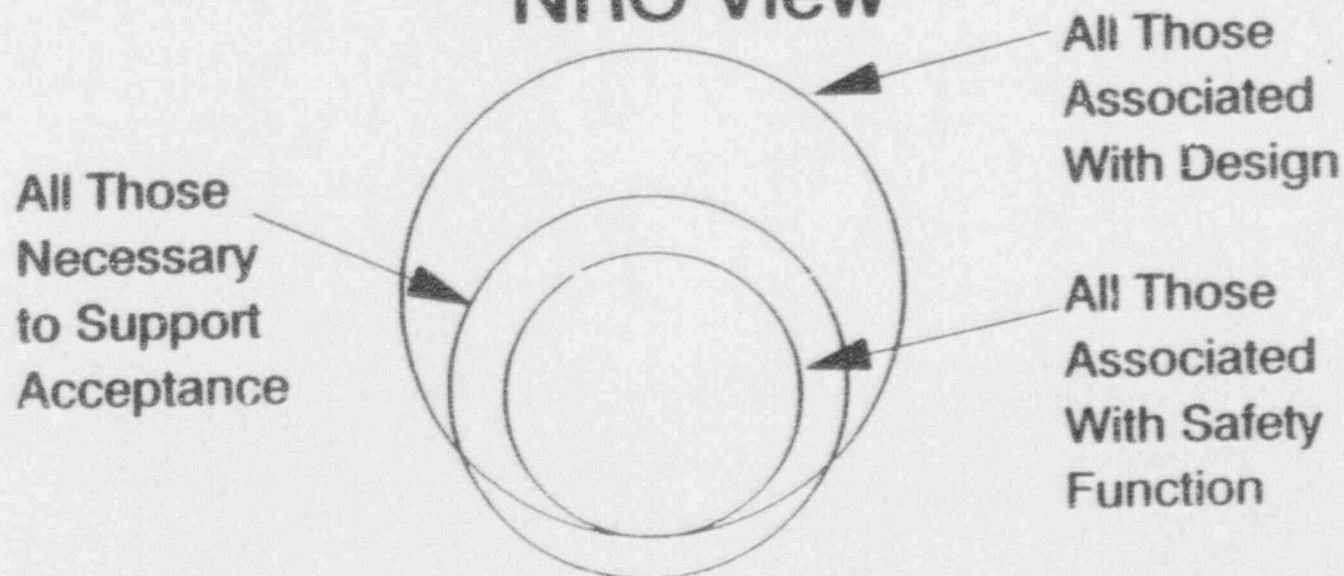


# Critical Characteristics

## Industry View



## NRC View



## CRITICAL CHARACTERISTICS

THE COMPREHENSIVE PROCUREMENT INITIATIVE INCLUDED REFERENCES TO TWO KEY INDUSTRY DOCUMENTS RELEVANT TO UNDERSTANDING CRITICAL CHARACTERISTICS FROM AN INDUSTRY PERSPECTIVE:

THE INDUSTRY COMMITTED TO DEVELOP PROGRAMS TO MEET THE INTENT OF EPRI NP-5652, "GUIDELINE FOR THE UTILIZATION OF COMMERCIAL GRADE ITEMS IN NUCLEAR SAFETY RELATED APPLICATIONS"

WHILE LESS EXPLICITLY ENDORCED IT ALSO NOTED THAT EPRI NP-6406, "GUIDELINE FOR THE TECHNICAL EVALUATION OF REPLACEMENT ITEMS IN NUCLEAR POWER PLANTS" PROVIDES A SOUND PROCESS FOR A TECHNICAL EVALUATION AND PROVIDES USEFUL INFORMATION.

### EPRI NP-5652

SECTION 1.2 INCLUDES THE FOLLOWING:

"THE TECHNICAL EVALUATION PROCESS PROVIDES A MEANS TO SPECIFY THE CORRECT REQUIREMENTS FOR AN ITEM IN A PROCUREMENT DOCUMENT...THE ACCEPTANCE METHODS FOR COMMERCIAL GRADE ITEMS PROVIDE REASONABLE ASSURANCE THAT THE ITEM RECEIVED IS THE ITEM WHICH WAS SPECIFIED."

SECTION 2.3 STATES:

"BASED ON THE PERFORMANCE AND DESIGN BASIS FOR AN ITEM, A VARIETY OF CHARACTERISTICS CAN BE IDENTIFIED THAT ARE CRITICAL FOR SATISFACTORY PERFORMANCE. HOWEVER FOR PURPOSES OF ESTABLISHING CRITICAL CHARACTERISTICS FOR ACCEPTANCE, ONLY CERTAIN OF THESE MUST BE VERIFIED TO PROVIDE REASONABLE ASSURANCE THAT THE ITEM SPECIFIED IS THE ITEM RECEIVED."

SECTION 3.4 STATES:

"CRITICAL CHARACTERISTICS FOR DESIGN ARE PROPERTIES OR ATTRIBUTES WHICH ARE ESSENTIAL FOR THE ITEM'S FORM, FIT AND FUNCTIONAL PERFORMANCE...THE CRITICAL CHARACTERISTICS FOR DESIGN ARE DETERMINED BASED UPON THE ITEM'S FUNCTION, ITS FMEA (IF PERFORMED) AND DESIGN DOCUMENTATION."

SECTION 3.6.5 STATES:

"CRITICAL CHARACTERISTICS FOR ACCEPTANCE ARE BASED ON AN ITEM'S CRITICAL CHARACTERISTICS FOR DESIGN. CRITICAL CHARACTERISTICS FOR ACCEPTANCE ARE ATTRIBUTES OF AN ITEM WHICH, ONCE SELECTED FOR VERIFICATION, PROVIDE REASONABLE ASSURANCE THAT THE ITEM RECEIVED IS THE ITEM SPECIFIED. A CRITICAL CHARACTERISTIC FOR DESIGN MAY TAKE A DIFFERENT FORM THAN A CRITICAL CHARACTERISTIC FOR ACCEPTANCE. FOR EXAMPLE, THE CRITICAL CHARACTERISTICS FOR DESIGN OF AN ITEM MAY BE ITS SHEAR AND TENSILE STRENGTHS AND DUCTILITY. THE CRITICAL CHARACTERISTICS FOR ACCEPTANCE COULD BE MARKINGS AND MATERIAL HARDNESS, WHICH CAN PROVIDE REASONABLE ASSURANCE THAT THE MATERIAL SPECIFIED IS THE MATERIAL RECEIVED."

THE NRC, ON THE OTHER HAND, HAS TAKEN THE FOLLOWING POSITION(S) IN GENERIC LETTER 91-05:

"THE NRC HAS NOT TAKEN THE POSITION THAT ALL DESIGN REQUIREMENTS MUST BE CONSIDERED TO BE CRITICAL CHARACTERISTICS AS DEFINED AND USED IN EPRI NP 5652. RATHER, AS STATED IN APPENDIX B, CRITERION III, LICENSEES MUST ASSURE THE SUITABILITY OF PARTS, MATERIALS, AND SERVICES FOR THEIR INTENDED SAFETY-RELATED APPLICATIONS...THE LICENSEE IS RESPONSIBLE FOR...PROVIDING REASONABLE ASSURANCE OF THE CONFORMANCE OF THE ITEM TO THE CRITERIA."

THERE ARE AT LEAST TWO FUNDAMENTAL DIFFERENCES IN THESE DOCUMENTS:

THE INDUSTRY DOCUMENTS CLEARLY OUTLINE THE DIFFERENCES BETWEEN CRITICAL CHARACTERISTICS FOR ACCEPTANCE AND THOSE ASSOCIATED WITH SAFETY FUNCTION. THE NRC DOCUMENT EQUATES THE TWO.

THE INDUSTRY DOCUMENTS ARE INTENDED TO PROVIDE "REASONABLE ASSURANCE" THE ITEM RECEIVED IS THE ITEM SPECIFIED. THE NRC DOCUMENT IS INTENDED TO PROVIDE "REASONABLE ASSURANCE" THAT THE PART CONFORMS TO THE CRITERIA ESTABLISHED AS PART OF THE SAFETY FUNCTION REVIEWED.

## PREVIOUS INSPECTION ISSUES

- FPC NEVER AGREED THAT THESE WERE NON-COMPLIANCES. THERE WAS NOTHING WARRANTING CORRECTION AND WE NEVER COMMITTED TO THE NRC TO CHANGE OUT ANY OF THE AFFECTED COMPONENTS. THUS, CORRECTIVE ACTION TIMELINESS IS MOOT.
- IF THE NRC WISHES TO CONSIDER THEM ON THEIR MERITS, IT WILL BE NECESSARY TO IDENTIFY THE REQUIREMENTS APPLICABLE TO CR-3 AT THE TIME OF THE DEDICATION ACTIVITIES AND EVALUATE OUR COMPLIANCE WITH THEM.
- FPC DOCKETED A THOROUGH RESPONSE IN JANUARY, 1990. THE NRC HAS NEVER REVIEWED THE MERITS OF THAT RESPONSE. WE REMAIN WILLING TO DO SO, BUT THE STAFF HAS NOTIFIED THE COMMISSION THAT SUCH WAS NOT YOUR INTENT. SECY 90-261 INDICATED THAT (WITH REGARD TO THE CR-3 NOV):

"...THE STAFF HAS NOT EXPENDED THE RESOURCES TO DETERMINE WHETHER THESE CASE-SPECIFIC ARGUMENTS HAVE ADEQUATE MERIT TO WITHDRAW THE PENALTY."

- FPC ACTUALLY PERFORMED A "REDEDICATION" OF SEVERAL DOZEN PACKAGES AND COMPLETED A THOROUGH ASSESSMENT (TERMED OUR LOOK-BACK PROGRAM) OF PAST PROCUREMENT PACKAGES BASED ON A SAMPLE SIZE AND SCOPE AGREED TO BY THE NRC. WE OFFERED TO DISCUSS THE REPORT AND THE ACTIONS TAKEN IN RESPONSE TO THESE REVIEWS, BUT THE TEAM INSTEAD CHOSE TO FOCUS ON THOSE IDENTIFIED IN THE WITHDRAWN NOV.
- FPC WAS SURPRISED THAT THE STAFF WANTED TO FOCUS ON THESE ISSUES AND CLEARLY INFORMED THE TEAM THAT WE DID NOT CONSIDER THEM TO BE NON-CONFORMANCES. WE WERE DISAPPOINTED THAT OUR POSITION WAS NOT MENTIONED.

IT SHOULD BE NOTED THAT MUF'S ARE NOT PROCUREMENTS AT ALL. THIS PROCESS IS USED TO JUSTIFY THE VERY LIMITED USE OF NON-SAFETY MATERIAL OR COMPONENTS THAT WE ALREADY POSSESS. AS SUCH, SOURCE INSPECTIONS, OEM TRACEABILITY AND OTHER BASIC CONCEPTS MAY NOT APPLY OR BE ACHIEVABLE.

MUF 0007-90 THERMOMETER

ISSUES:

RIP ADEQUACY AND IMPLEMENTATION

POSITION:

THE ALL-WELDED CONSTRUCTION IS VIEWED AS A DESCRIPTION RATHER THAN A CHARACTERISTIC. THE LOW PRESSURE APPLICATION WOULD NOT MAKE SUCH A REQUIREMENT. FURTHER, THE CONFIGURATION CHECK WAS LIKELY TO HAVE ADDRESSED THIS DESCRIPTION SUFFICIENTLY. USE OF MAGNET FOR SUCH PURPOSES IS NO LONGER PRACTICED ALTHOUGH IT IS A REASONABLE TECHNIQUE IN CERTAIN APPLICATIONS.

MUF 0013-90    TERMINAL BLOCK MOUNTING PLATE

ISSUES:

REPLACEMENT MAY BE INADEQUATE TO CORRECT PROBLEM  
(EXCESSIVE CORROSION)

POSITION:

NOT A PROCUREMENT ISSUE. THIS WAS THE PART QUALIFIED FOR  
THE ENVIRONMENT.



MUF 0014-90 AMPHENOL CONNECTORS

ISSUES:

VERIFICATION OF SPECIFIED CHARACTERISTICS  
APPROPRIATENESS OF SPECIFIED CHARACTERISTIC (RESISTANCE  
VALUE)

POSITION:

THE ASSOCIATED PARENT COMPONENTS ARE NOT SAFETY RELATED  
BUT ARE EQ EQ REPORT IS BASED ON MIL SPEC NUMBER WHICH  
WAS VERIFIED. THE RESISTANCE VALUE WAS IN ERROR.

ITEMS 1 AND 2

PO F670284K COLTEC SUB-COMPONENTS

ISSUES:

CLARITY AND ADEQUACY OF CHARACTERISTIC VERIFICATION

POSITION:

SUFFICIENT CHARACTERISTICS WERE VERIFIED TO ESTABLISH REASONABLE ASSURANCE THAT PART WAS THE ONE SELECTED. IF INSPECTION PERSONNEL ARE UNABLE TO IDENTIFY APPROPRIATE DIMENSIONS THEY SEEK ADDITIONAL GUIDANCE FROM PROCUREMENT ENGINEERING.

THESE WERE COMMERCIAL GRADE ITEMS ACQUIRED BY THE SUPPLIER OF THE EDG. THE COLTEC COMMERCIAL GRADE DEDICATION PROGRAM WAS NOT AVAILABLE AT THIS TIME. THE PARTS WERE IDENTIFIED, SELECTED AND USED BY COLTEC SUPPLIED CRAFT PERFORMING THE EDG UPGRADE AT THE SITE. THE UPGRADED DIESELS WERE SUBJECTED TO VERY EXTENSIVE TESTING AND RELATED PERFORMANCE HAS IMPROVED. THE SELECTION OF CRITICAL CHARACTERISTICS WAS OVERLY EXTENSIVE TO MEET REASONABLE ASSURANCE STANDARD.

ITEM 3

PO F670378V BEARINGS

ISSUES:

ADEQUACY OF CRITICAL CHARACTERISTICS AND VERIFICATION (INCL  
SAMPLE SIZE)

POSITION:

SUFFICIENT CRITICAL CHARACTERISTICS WERE IDENTIFIED AND VERIFIED TO PROVIDE REASONABLE ASSURANCE OF BEARING CAPABILITY. COMMERCIAL BEARING MANUFACTURERS HAVE EXTENSIVE PROGRAMS TO ASSURE PROPER MARKINGS AND SUCH MARKINGS ARE READILY RELATED TO KEY CHARACTERISTICS. NEVERTHELESS, WE HAVE MODIFIED FACCR TO INCLUDE MATERIAL AND HAVE VERIFIED ALL SPECIFIED CHARACTERISTICS. SAMPLE SIZE WAS ACCEPTABLE BUT INAPPROPRIATE BASED ON LOT SIZE (WITH JUST FOUR, DOING THEM ALL SIMPLY MAKES SENSE).

ITEM 4

PO F842352K PUMP IMPELLER

ISSUES:

CLARITY AND VERIFICATION OF IDENTIFIED CHARACTERISTICS  
MATERIAL SUBSTITUTION

POSITION:

GENERALLY AGREE SINCE THESE CONCERNS WERE LICENSEE IDENTIFIED. HOWEVER, SUFFICIENT CRITICAL CHARACTERISTICS WERE ORIGINALLY VERIFIED TO PROVIDE REASONABLE ASSURANCE. THE MATERIAL SUBSTITUTION WAS TECHNICALLY APPROPRIATE, BUT SHOULD HAVE BEEN APPROVED BY FPC.

ITEM 5

PO F842722K SHAFT KEY

ISSUES:

ADEQUACY OF CRITICAL CHARACTERISTICS  
CLARITY OF SOURCE INSPECTION DOCUMENTATION

POSITION:

SHAFT KEYS ARE NOT COMPLEX ITEMS. THE SOURCE INSPECTOR CERTIFIED THAT HE HAD CHECKED THE ITEMS REQUIRED. DOCUMENTATION MAY MAKE FUTURE REVIEW DIFFICULT, BUT SHOULD NOT CAUSE SUITABILITY TO BE QUESTIONED.

ITEM 6

PO F844359C STEEL PLATE

ISSUES:

LACK OF CMTR AND ADEQUACY OF HARDNESS TESTING

POSITION:

CoC, MATERIAL AND HARDNESS TEST IS SUFFICIENT TO PROVIDE REASONABLE ASSURANCE FOR NON-PRESSURE RETAINING APPLICATIONS OF PLATE STEEL. FPC TYPICALLY DID UTILIZE CMTR'S FROM NON-SURVEYED COMMERCIAL GRADE SUPPLIERS UNTIL THE 1989 INSPECTION CRITICIZED US FOR DOING SO. WE GENERALLY AGREE THIS WOULD BE AN ENHANCEMENT. THE QCI UTILIZED THE HEAT NUMBER TO ENHANCE TRACEABILITY FROM WAREHOUSE TO FIELD.

ITEM 7

PO F670407K CHECK VALVE DISC SEAT

ISSUES:

ADEQUACY OF SOURCE INSPECTION (ACCEPTANCE OF CoC)

POSITION:

WHILE FPC AGREES THAT RELIANCE ON A CoC ALONE AS A RECEIPT INSPECTION METHOD IS INADEQUATE, WE DO BELIEVE THAT A QUALIFIED SOURCE INSPECTOR MAY FIND THIS THE SIMPLEST MEANS TO DOCUMENT THE MATERIAL ADEQUACY. WHILE IT DOES SUPPLY REASONABLE ASSURANCE THAT THE PART IS THE ONE SPECIFIED, WE DO NOT ENCOURAGE RELIANCE ON CoC AS A GENERAL PRACTICE.

ITEM 8

PO F845035D 3-WAY BALL VALVE

ISSUES:

ADEQUACY OF SIP GUIDANCE

POSITION:

THE INSPECTOR ESSENTIALLY PERFORMED A LIMITED SURVEY OF THE MANUFACTURERS MATERIAL CONTROL PROGRAM IN LIEU OF ABSOLUTE MATERIAL TRACEABILITY WITH FPC'S PRIOR CONCURRENCE. WHILE THIS IS AN UNUSUAL APPLICATION, AND THE DOCUMENTATION IS LIMITED, IT IS NOT FUNDAMENTALLY FLAWED. THUS, REASONABLE ASSURANCE THAT THE PART WAS THE ONE INTENDED WAS OBTAINED.



ITEM 9

PO F844057V

TOXIC GAS SENSORS

ISSUES:

FAILED TO IDENTIFY APPROPRIATE CRITICAL CHARACTERISTICS

POSITION:

FPC AGREES THAT THE SAFETY FUNCTION WAS MISSTATED. HOWEVER, SUFFICIENT CHARACTERISTICS WERE IDENTIFIED. AS NOTED IN REPORT, FUNCTIONAL PERFORMANCE WAS ASSURED BY REQUIRED WITNESSING OF FUNCTIONAL TESTING AT THE OEM'S FACILITY AND BY POST-INSTALLATION TESTING.

ITEM 10

PO F842336V

TERMINAL BLOCKS

ISSUES:

UNCLEAR

POSITION:

THIS DEDICATION PACKAGE APPEARED TO BE CONSISTENT WITH EPRI, TWG PACKAGES. THE NRC TEAM MAY HAVE NOT UNDERSTOOD THE SEMANTICS USED IN THE PACKAGE.

ITEM 11

PO F842798V

DIESEL SUPPORT SYSTEM PUMP MOTOR

ISSUES:

INAPPROPRIATE PART FUNCTIONAL DESCRIPTION AND ERRORS DURING SOURCE INSPECTION.

POSITION:

THE RELATIONSHIP BETWEEN THE SUB-SYSTEM THIS MOTOR IS PART OF AND THE DIESEL IS DIFFICULT TO CORRECTLY ARTICULATE. A MOTOR'S FUNCTION IS ACTIVE BUT THE ASSOCIATED PUMP IS NOT ESSENTIAL TO ASSURE DIESEL OPERABILITY. THE SUB-SYSTEM'S PRESSURE BOUNDARY FUNCTION DOES EFFECT EDG OPERABILITY. HOWEVER, FPC RECEIPT INSPECTION ACTIVITIES DID IDENTIFY THE NOTED DISCREPANCIES. WE ARE UNSURE WHY THE TEAM THOUGHT THEY WERE IDENTIFIED DURING INSTALLATION.

ITEM 12

PO F844659K

FUSE REDUCERS

ISSUES:

TRACEABILITY OF PARTS TO OEM.

POSITION:

FPC CONSIDERS THE LEVEL OF TRACEABILITY TO BE COMPLETELY ADEQUATE. A PACKAGE OF 20 SIMPLE PARTS WERE PACKAGED FOR FPC BY THE OEM WITH A CoC FROM THE OEM TO FPC INCLUDED IN THE PACKAGE. THE TRANSACTION/SHIPMENT WENT THROUGH A LOCAL DISTRIBUTOR.

ITEM 13

PO F844719D

A-8 RELAYS

ISSUES:

INCOMPLETE CRITICAL CHARACTERISTIC IDENTIFICATION

POSITION:

FPC HAS REVIEWED THE PACKAGE WITH THE NRC COMMENTS IN MIND AND IS SATISFIED WITH THE PACKAGE'S ADEQUACY. THE LIMITED APPLICATION (INDICATION ONLY) WAS NOTED AND RELIED UPON IN SELECTING CRITICAL CHARACTERISTICS.

ITEM 14

PO F740240K

JOSLYN-CLARK RELAYS

ISSUES:

ADEQUACY OF INSPECTION PLAN

POSITION:

THE COIL CHARACTERISTICS WERE NOT SPECIFIED OR VERIFIED BECAUSE, AS NOTED ON THE PO, THESE WERE SUPPLIED BY FPC FROM OUR SAFETY RELATED STOCK.

ITEM 15

PO F844454K

J-C RELAY COILS

ISSUES:

ADEQUACY OF SOURCE INSPECTION GUIDANCE AND  
DOCUMENTATION

POSITION:

ALTHOUGH ATTACHMENT WAS FOR WHOLE RELAYS, IT WAS  
ADEQUATE FOR INCLUDED SUB-COMPONENTS (RELAYS).

ITEM 16

PO 844090V

SWITCHES

ISSUES:

ADEQUACY OF SOURCE INSPECTION DOCUMENTATION  
CONFLICTING DRAWING DATES

POSITION:

THE DRAWING RELIED UPON WAS THE CORRECT (ONLY) REVISION.  
THE INSPECTOR SHOULD HAVE NOTED THE  
TRANSCRIPTION/LEGIBILITY ERROR.



FPC PRELIMINARY COMMENTS ON NRC-IDENTIFIED PACKAGE CONCERNS  
INSPECTION 92-201

## 2.5 MATERIAL UPGRADES

### (1) MUF 0007-90 Dresser-Ashcroft Thermometers

#### CONCERNS AND RESPONSE:

The first paragraph discusses lack of evidence of traceability, and a "late" receipt inspection. Since this item was purchased as a non safety related component there is no requirement to have traceability or to perform a receipt inspection.

The second paragraph discusses use of this thermometer without a thermowell. This is a design issue not a procurement one. Therefore the procurement process is not subject to criticism.

The third paragraph discusses the fact that the Receipt Inspection Plan (RIP) listed stainless steel construction but not "all welded". It appears that the Inspection Planner considered "all welded construction" as part of the configuration check - (Standard published Product Description). Additionally, the receipt inspection utilized a magnet to verify that material was stainless, not carbon steel.

#### CONCLUSION:

Verification activities were adequate and reasonable. This effort was in early 1990. Currently we would make "all welded construction" a separate line item on Inspection Plan and use a alloy separator to determine that the material was stainless steel.

### (2) MUF 0013-90 Mounting Plate for States Terminal Block

#### CONCERNS AND RESPONSE:

The report identifies a concern that during replacement of the mounting plate there was evidence of corrosion. The Inspection Team is questioning the suitability of the block for its environment. This is not a Procurement issue because the upgrade was for a like for like replacement. Feedback relative to conditions found must be handled under the FPC Problem Reporting system.

#### CONCLUSION:

Material was adequately dedicated.

(3) MUF 0014-90 Amphenol BNC Coaxial Cable Connectors

CONCERNS AND RESPONSE:

FPC provided no justification for not choosing all characteristics associated with specifications listed in the material specification, vendor catalog and EQ test report.

The NRC noted that the insulation resistance specified on the FA/CCR is less than that shown on the Manufacturer's Data Sheet. There was an error made by the FPC Engineer in the acceptance criteria set for insulation resistance.

CONCLUSION:

FPC's dedication program does not specify that all product specifications should be identified with a corresponding critical characteristic for acceptance.

An error was made in transcription of insulation resistance from the manufacturer's data sheet to the FA/CCR. However, suitability of the material for service is not jeopardized. The item, as specified on the verification block of the MUF was verified to be marked with the Military Part Number marking as specified by the Sensor System manufacturer. Reasonable assurance of receipt of the specified item was therefore achieved.

3 DEDICATION PACKAGE REVIEW

(1) PO F670284K

DESCRIPTION: Adaptor Nozzle Coll Diesel, Item 12  
Adaptor Valve - Cylinder Liner, Item 17

FPC PACKAGE: M-1 / M-2

NRC CONCERN:

Fracture and Thread Shear were listed on the FA/CCR as failure modes but material was not specified as a critical characteristic to be verified.

Source Inspector initiated "Statement of Conformance" did not clearly state whether or not the Inspector verified the dimensions to the vendor drawing.

EVALUATION:

FPC recognizes that the critical characteristics specified for the item dedicated did not directly bound all of the failure modes listed. Verification of vendor part number and dimension/ configuration provided reasonable assurance that the part received was that which was ordered. Since this dedication preceded the issue of the Hatch assessment report "reasonable assurance" was the guidance in place in the industry.

Not specifying which dimensions to verify is more of an inconvenience to the inspection personnel than a failure to make adequate checks. Lacking a list of specific dimensions the inspection personnel are forced to take all shown on the drawings. FPC recognized this problem several months ago and has internal letter guidance to the Procurement Engineers on this matter.

The summary paragraph for this item states that FPC did not adequately describe the safety function for dedication of the adapter nozzle and did not state all of the effects of the part's failure. Although the Safety Function listed on the FACCR is brief it appears to be correct and adequate for evaluation of critical characteristics. Longer dissertations would not have improved the list of critical characteristics. The same is true for the effects of part failure. This is an area of professional opinion which can and will vary.

Due to the urgent need for this material the Source Inspection Plan was included in the body of the purchase order. This purchase order instructed the Inspector to verify part number and perform a Dimensional Inspection against the vendors drawing. The Source Inspector performed the inspection on 3/23/90, signed the "Statement of Conformance" attesting that the parts supplied meet the requirements of the

Procurement documents. He also attached a copy of the OEM Certificate of Conformance statement listing the part numbers inspected.

SUMMARY/CONCLUSION:

There is no reason to believe that the inspection was not performed as directed. The Certified Inspector attested to conformance to the purchase order. The material was properly dedicated for service. Verification of manufacturer's part number and dimensions provide reasonable assurance that the item received is the item ordered. The item was provided by the diesel generator manufacturer/ designer and installed under the direction of their qualified service representative.

Future purchases of this material would be done as Appendix B procurements as long as Colt continues to supply them under an FPC approved program. Based upon this, Part Changes were written to revise these to "D", Attachment Q procurements.

The material in question was installed under MAR 88-01-12-01. There is no material of the same buy available for re-inspection. Since the material was installed during Refuel VII, it has been subjected to multiple diesel starts and runs.

(2) PO F670284K

DESCRIPTION: Adapter Valve Cylinder Liner

NRC CONCERN:

The comments on this item are very similar in nature to those under NRC item 1. This is because both items were on the same PO and dedicated by the same people at the same time. The discussions in Item 1 also apply equally here.

EVALUATION:

Discussions with the FPC System engineer indicate support for the NRC argument that the air start system would have been a more appropriate designator for the parent component. However, in the next paragraph the NRC notes that during failure mode they want us to identify not only a failure of starting air system but also failure of the diesel to start. It is doubtful if this would have impacted the critical characteristics ultimately selected.

SUMMARY/CONCLUSION:

Material was adequately dedicated.

(3) PO F670378V

DESCRIPTION: Bearing Set Thrust, MRC 8313

FPC PACKAGE: M-4

NRC CONCERN:

NRC found that the critical characteristics specified were inadequate because they did not include material and load rating.

RIP did not include configuration as a critical characteristic. RIP only required two of the four bearings to be inspected.

EVALUATION:

Load rating is generally not marked on the bearing and can not be verified through lab testing. Load rating is established by the design of the bearing. The only practical means for verifying this characteristic is by the vendor part number in conjunction with bearing configuration and material. However, material was not included as a critical characteristic in this dedication. Note that EPRI TWG CG16c01 for Bearings, although not issued until 1/14/91 does not include material as a critical characteristic for acceptance.

Bearing manufacturers assign unique numbers to their bearing styles which are indicative of application ratings and limitations. Materials, and dimensions are selected to meet these requirements and published product literature reflects these. Equipment manufacturers then use this data to select specific bearings for an application. Therefore, the manufacturer has no incentive to use substitute materials or change ratings.

Further, since bearings are produced in large quantities at inexpensive costs, there is no reason to suspect tampering, re-fitting, or other fraudulent activities.

The Inspection Planner did not list configuration as a separate verification requirement on RIP. However, the planner did specify the inspection of the critical dimensions and attached a copy of the catalog page (as Page 2 of the RIP) including a pictorial sketch of the bearing configuration. The selection of two samples in a lot of four is in accordance with MIL STD 105D. Since these items are mass produced and are of simple design there is no reason to be overly concerned about lot homogeneity.

SUMMARY:

With the exception of specifying configuration as a Inspection Line item, all critical characteristics were verified. In conducting the

Dimensional inspections using the catalog sketch a verification of configuration is somewhat inherent. The use of sample inspection is an acceptable industry process.

STATUS:

installed bearing was located in a spare pump assembly, thus resolving any operability issue. Three bearing sets from the order remained in the warehouse. Material checks were performed on all remaining units and found to be acceptable. The installed bearing was replaced with one of the warehouse units.

The FACCR for FIMIS #61941046 has been revised to include the critical characteristics of concern.

CONCLUSION:

Material was adequately dedicated.



(4) PO FB42352K

DESCRIPTION: Impeller, Pump 6HND-134

FPC PACKAGE: M-12

NRC CONCERN:

Critical Characteristics specified by NPES were not all translated from the FACCR to the Receipt Inspection Plan.

The FA/CCR specified specific dimensional inspections. The Source Inspection Plan specified a number of specific dimensions but also indicated random Dimensional Inspection. Additionally, order specifies material as ASTM A-296. The Source Inspector approved an alternate material type, A744 without engineering concurrence. Also non-destructive test adequacy was not verified.

EVALUATION:

During the preparation for the NRC Inspection, FPC identified the inconsistency in Inspection criteria. A Problem Report was issued to control the item. No determination of exact cause for the difference in FA/CCR and Inspection Plan could be determined. The material change from A296 to A744 was technically acceptable but should have been submitted to FPC for approval prior to shipment. The interpretation of the Inspection Plan relative to the NDE concern was that the requirement on the FA/CCR only specified that documentation of the results of NDE were to be available.

SUMMARY:

This package was identified by FPC during the pre-inspection review as having some problems. These were identified on Problem Report 92-0002. FPC performed dimensional checks on 3/18/92 as part of the disposition for Problem Report 92-0002. All dimensions were within vendor drawing limits. FPC could not verify impeller geometry without sending unit back for three dimensional measurements. This was evaluated and determined to be beyond the requirement for reasonable assurance. This characteristic was therefore deleted as part of the actions associated with PR 92-0002.

FPC PQA addressed the substitution of material during the NRC inspection. ASTM A-296 was discontinued in 1980 and replaced by specifications A-743 and A-744.

CONCLUSION:

Based on additional verifications required by the Problem Report (performed prior to the MRC Inspection) the verification activity is adequate. A request for corrective action was issued to our Source Inspection Contractor relative to the material change. If NDE as a Special Process was specified as a critical characteristic, the Inspection Plan would have been different. Nevertheless, additional procedure changes have also been initiated to provide consistency in the completion of FA/CCR's and Inspection Plans.

(5) PO F842722K

DESCRIPTION: Lower Impeller Shaft Key for Blower on Colt Diesel

FPC PACKAGE: M-13

NRC CONCERN:

The critical characteristics shown in NP&SM Attachment 5A for a key are: configuration, dimensions, hardness, and material. Those selected by the engineer were: vendor part number, configuration/ dimensions.

The NRC noted that the PQA Receipt Inspection Plan (RIP) did not adequately verify the same characteristics specified by NP&SM, i.e. part number, configuration, and dimensions. Additionally, the Source Inspection Plan (SIP) does specify methods of verification. There was no indication that material was verified. Also, the SIP was written and approved by the same individual.

EVALUATION:

Not selecting all of the critical characteristics indicated on Attachment 5A of the NP&SM is not a requirement or violation of the program. This is provided as a guideline starting point for the procurement engineer. However, it is preferable that differences are explained so that the permanent documentation reflects the logic of the engineer performing the evaluation.

Since the failure mode shown on the FACCR indicates fracture, this would have been a stronger package if material or hardness had been specified as a critical characteristic. However, not including this does not mean that reasonable assurance was not achieved. Note that the Source Inspection Plan did specify a check for material and this attribute was accomplished. Note also that the FACCR specified "configuration/dimensions" as a single critical characteristic indicating an understanding that with the benefit of a drawing depicting the item, configuration is an inherent element of dimensional verification.

The RIP did not need to specify inspections of all critical characteristics because they were verified by Source Inspection. The Source Inspector's Report and Statement of Conformance indicate acceptance. In cases where the Supervisor developed the SIP he would have signed as the preparer and the approval Supervisor.

SUMMARY:

Since the part was purchased from the original diesel manufacturer; and, the part number, dimensions and configuration were verified, reasonable assurance was achieved. The dedication process was suitable for dedicating this item for its intended application.

CONCLUSION:

Dedication was adequate.

(6) PO F844359C

DESCRIPTION: Plate SS 4x8x $\frac{1}{4}$  A-240 NP

FPC PACKAGE: M-21

NRC CONCERN:

NRC noted that the FACCR did not have any basis of purchase stated.

NRC is concerned that there was no certification from the material manufacturer, such as by CMTR, or verification and documentation of traceability such as by a heat number.

The NRC inspector was unable to tell from the receipt inspection report if the inspector did several checks of hardness and averaged them. Considering that a piece of sheet steel is probably formed from a single blank which is subjected to a rolling process there is no reason to believe that hardness would vary over the area of the sheet.

RIP did not require traceability to heat number. It could not be determined by NRC if hardness reading was one reading or an average.

EVALUATION:

The Basis of Purchase block on the FA/CCR form is intended to be used to explain the reason for purchase of the particular item. In several areas of the procurement documentation it is stated that this material is for structural use only.

Requests for certification or CMTR would not have added any credible evidence to the acceptability of this product. Note that FPC performed an overcheck of material type at receipt using an alloy separator thus confirming certain elements controlled by the recognized ASTM controls.

Notation to one hardness reading in comparison to a average is not relevant. Inspectors are trained on the use of hardness equipment. Multiple hardness readings are not normally performed.

SUMMARY:

Inspections appear adequate.

CONCLUSION:

Material was properly dedicated.

(7) PO F670407K

DESCRIPTION: Seat Disc, DC 24" Anchor Darling

FPC PACKAGE: M-25

NRC CONCERN:

Source Inspector found material to be acceptable by review of C of C. Basis for purchase ("like original") was not verified.

EVALUATION:

Source Inspection Plan was developed correctly in response to the FA/CCR. The Source Inspection Report contains a number of dimensional verifications. Material was verified by reviewing the material certification at the vendors (OEM) facility.

SUMMARY:

Additional details could have been provided on how the Inspector accomplished his verifications. However, the inspection detail he has provided is adequate to establish reasonable assurance we have received what we ordered.

CONCLUSION:

Material was properly dedicated.

(B) PO FB45035D

DESCRIPTION: Valve, ball, 3-way Stainless Steel Stem

FPC PACKAGE: M-28

HRC CONCERN:

Not enough objective evidence was recorded to indicate what Source Inspector did to accept material.

EVALUATION:

Source inspection was well specified. The Source Inspector noted his acceptance on the checklist-type Source Inspection Plan with reference to additional guidance received from FPC directing a review of the vendor's "administrative and process material controls" and attested to the acceptance of the material on the "Statement of Conformance".

SUMMARY:

The inspections were adequate - The amount of objective evidence does vary from inspector to inspector and package to package. However, procedure changes will require increased objective evidence in Source Inspection Reports.

CONCLUSION:

Item was properly dedicated.

(9) PO FB44057Y

DESCRIPTION: Sensor, Type 124-LD, for Interscan LD-24 SO Monitor

FPC PACKAGE: F-0

NRC CONCERN:

The description of parent system and part safety functions was incomplete, indicating pressure retention only.

The NRC noted that no functional performance required to be verified.

The SIP did not list weight, markings or what to verify by functional test, and dimensional inspection. The Source Inspector only reviewed two drawings. The Source Inspection Report not reviewed by FPC for adequacy.

EVALUATION:

The design engineer was incorrect in his understanding of the safety function of the monitor. It's safety function is not system pressure retention for the air handling system. It is required to detect toxic gas levels in the make up air supply for the control room and place it in a recirculation mode within a prescribed time limit to protect control room operators. This resulted in an improper safety function, failure mode, and potential effects of part failure on the FACCR. This will be corrected. However this error did not have an adverse impact on the critical characteristics chosen.

The NRC also noted that part failure modes were incomplete. The FA/CCR considered leakage (of connection to system), but not leakage of sensor water (which occurred shortly after first sensor was installed requiring its immediate replacement). Part failure mode inadequacies were addressed above. Leakage check for sensor water is not necessary at the time of dedication because the sensor would not have calibrated properly with any water leakage from the cell. Further, the Inspection Report noted that Fill fluid isn't verified. Verification of this fluid is covered by Attachment A to the FACCR, A sub section d. "...both items filled per FPC Vendor Manual No. 1736 A Rev 1".

The Inspection Team statement regarding failure to address functional performance is not correct. Item number 2 on the FA/CCR is function. Attachment A to the FACCR says that this critical characteristic can be satisfied by CR3 monitor calibration or by witnessing a manufacturer's functional test at time of source inspection. The source inspection report indicates that the latter was performed. The Source Inspection Report clearly states that a functional test was witnessed in accordance with Interscan's Test Procedure, Revision 6 which is on file at FPC.



The Inspection Plan was responsive to the FA/CCR. Additional test specifics may have been provided by engineering, however, the FA/CCR did refer to the option of witnessing a functional test which was done. The Source Inspection Plan was general and relied on the Inspector to decide on inspection depth to determine acceptance.

SUMMARY:

The Inspector did various inspections, reviews, and witnessed functional testing. His overall conclusion was that the item was in accordance with the purchase order requirements. Future Source Inspection Plans and Reports need to be more definitive - Procedures are being revised to address more specific direction for Source Inspectors.

Even though it is not required to be called out due to source inspection calibration for dedication, the plant procedures do require calibration on installation. The associated Work Request also shows that this was done for this detector via performance of SP-372B).

CONCLUSION:

The dedication package is adequate.

(10) PO F842336V

DESCRIPTION: Block, Terminal ZWN, 8P, 600V

FPC PACKAGE: E-1

NRC CONCERN AND FPC EVALUATION:

The concern expressed by the NRC on this item is very general in nature. No specifics are mentioned for all of the many shortcomings referenced. An attempt was made by FPC to provide additional information regarding this item.

The NRC noted that the CUR states harsh environment - and questioned the limits. This terminal block is environmentally qualified. To obtain the EQ requirements one would look in the EQ Manual and/or the limits in the referenced Qualification report.

The NRC also questioned the basis of contact resistance of 100 milliohms, the 500V test and insulation dielectric test. The values for insulation resistance and dielectric strength were verified as originating from the Vendor Qualification Report.

CONCLUSION:

This dedication is consistent with the EPRI Technical Evaluation package for Terminal Blocks and the FPC vendor qualification report. It is adequate as written.

(11) PO F842798V

DESCRIPTION: Pump with Motor, Burke 35G.

FPC PACKAGE: E-8 / E-9

NRC CONCERN:

The parent component was not named or described and its safety function was expressed as that of the entire EDG system which was too far removed from the parts description to provide meaningful information for determining the part safety function. The part safety function is marked active but is listed as pressure boundary only.

Seismic qualification was not listed as a critical characteristic. The Source Inspector did not identify that motor frame size provided was different than specified in the PO. It was not detected until installation was attempted.

EVALUATION:

By referencing the pump tag number (DJP-3 & 4), and with a reasonable knowledge of CR-3 tag convention, it is clear that DJP-3 is a Diesel Jacket coolant pump which is associated with the Diesel Generator EGDG-1A/1B. With loss of pressure boundary integrity the jacket cooling inventory would be lost resulting in an inoperable diesel. Therefore, this is a safety function. Insufficient flow characteristics on DJP-3 would result in jacket temperatures outside the described range. This would result in discovery by operators during routine shift surveillances or in response to alarms. The diesel would then be started. At this point DJP-3/4 which is a standby pump is no longer required since the diesel would provide jacket cooling flow via an engine driven pump. Therefore, flow from DJP-3/4 is not considered a safety function; while integrity is, because cooling inventory must be preserved. (However, flow is a design related critical characteristic for DJP-3/4).

Seismic qualification is verified through critical characteristics such as material, and configuration. Seismic evaluation was handled by the Mechanical Engineering section. This information and a copy of the NCOR/Problem Report was provided to NRC during the inspection.

Extensive Source Inspection (40 hours plus) was performed on this procurement. However, the Source Inspector did not notice the change in motor frame size. This error was detected during the normal Receipt Inspection process - not at installation.

SUMMARY:

The Source Inspector did miss the motor frame size change. However, our Receipt Inspection process which is an inherent part of the acceptance process did identify and report the problem. Engineering accepted the change after detailed analysis required by the Plant Equipment Equivalency Replacement Evaluation (PEERE) process. This self identified problem was summarized in the Procurement package (PQA 91-006 MEMO). No formal corrective action was initiated with Bechtel because their contract had recently expired.

CONCLUSION:

Material was properly dedicated.

(12) PO F844659K

DESCRIPTION: Fuse Reducer

FPC PACKAGE: E-10

NRC CONCERN:

FPC did not provide adequate traceability to the manufacturer.

EVALUATION:

This appears not to be a dedication issue, but an issue of possible fraud. The certifications were from the OEM and contained the exact number of items supplied, and specified the FPC purchase order number. The OEM was a surveyed acceptable commercial grade supplier.

In addition to the traceability issue NRC states in the Inspection Report that the critical characteristics were listed as part number and description. The FACCR actually listed these, plus dimensions with tolerances. These were verified by PQA on receipt inspection.

SUMMARY:

Inspection and OEM certifications are adequate. However, it should be noted that in-line with the FPC response to the NUMARC Procurement Initiative a Distributor Evaluation program was implemented on 7/1/92. Future distributor control will assist in the reduction of fraud.

CONCLUSION:

The material was adequately dedicated.

(13) PO F844719D

DESCRIPTION: Relay, 120VAC 4 Pole, Allen Bradley

FPC PACKAGE: E-11

MRC CONCERNS:

The MRC noted the following concerns:

Mechanical load factors were not considered as critical characteristics

Pick up & drop out voltages were not checked

Shorts and opens were not included as failure modes.

FACCR doesn't state whether relays must energize or de-energize to perform provide load status indication

EVALUATION:

Mechanical load factors are not needed since the relay contact configuration is confirmed and the relay is verified not to have design and material changes. With design changes controlled and coil resistance verified, there is no need to check pick-up and drop-out voltage since all variables have been verified.

The FACCR states that the relays are used for status indication only. Therefore, the only failure of concern is degradation of safety related control power. Therefore, only insulation failure leading to shorts are considered as failure modes. This was included as a critical characteristic.

CONCLUSION:

Material was properly dedicated.

(14) PO F740240K

DESCRIPTION: Joslyn-Clark Convertible Pole Relays

FPC Package: E-12

NRC CONCERN:

The NRC's stated concerns included:

Safety Function of the relay did not state if relay must change state, and if so, whether it must energize or de-energize to perform its safety function.

The following were not listed as critical characteristics: seismic qualification, insulation resistance of coil and contacts, contact resistance and timing.

Source Inspection report did not provide load factors nor provide coil turns data as required.

EVALUATION

The FACCR did not restrict the relays in question to an energize versus de-energize state to perform their safety function. There is nothing wrong with this as it is a more generic dedication application and has little if any impact on the critical characteristics chosen for reasonable assurance.

Timing is not an appropriate critical characteristic because these are not time delay relays and applications do not typically involve contact race.

Seismic qualification is not specified as a critical characteristic because we do not consider it as such. Seismic qualification is provided through equivalency to the original order equipment during the source inspection.

Insulation resistance of the coil and contacts and contact resistance were not included as critical characteristics because at the time they were not considered as necessary to achieve reasonable assurance that the item received was that which was specified. These will be considered in our lessons learned for future procurements.

Load factors and coil turns data was not required for relays 4U4-130 and 4U6-130 (PO Items 1 and 2). FPC supplied the coils for these relays from our safety related stock. The Purchase order deleted the need for load factors/coil turns information for these Source Inspection Reports.

SUMMARY:

Source Inspections conducted as required.

CONCLUSION:

Material was properly dedicated, but constructive criticism could produce a higher quality package for future procurements.



(15) PO F844454K, Coils for Relays

DESCRIPTION: Coils for Joslyn Clark Relays

NRC CONCERN:

Letter No. 1187A incorrectly imposed inspection requirements for relays when the PO was for replacement coils. The SIP did not document that any relevant records were reviewed other than the COC and the coil resistance and turns test report. PQ's review of the SIR failed to note that the source inspector did not verify the vendor's COC basis.

EVALUATION:

The use of Doc. Ltr 1187A provides assurance that the parent component will function properly when the item is installed. By verifying the relay picks up at 80% or lower, the coil is actually being tested. The letter is for compete relays, but is more than adequate for coils.

This is another case of objective evidence relative to the determination of exactly how the Inspector came to the conclusion to accept the item. The Source Plan checklist indicated "satisfactory" by each requirement. Additionally, a written report provided additional information on the witness of testing (resistance, pick-up) and other activities.

SUMMARY:

Source Inspections provided adequate assurance items are as ordered. Procedural changes will provide more specific direction and reporting requirement for Source Inspections.

CONCLUSION:

Item was dedicated properly.

(16) PO F844090V

DESCRIPTION: Vacuum Switches for Control Room Toxic Gas Monitors

FPC Package: E-32

NRC CONCERN:

Not all of the Source Inspection Plan (SIP) verification requirements were adequately performed or documented (ie. the SIP required the parts to be installed and tested in a functional mock-up, the SIR did not indicate that it was performed). An incorrect revision of the vendor drawing was used. Certain acceptance criteria identified in the SIP were not adequately addressed, performed and/or documented by the SIR.

EVALUATION:

Objective evidence of the Inspectors activities are minimal. However, the Inspector witnessed a functional test to verify output contacts were set to 50" H<sub>2</sub>O per Interscan's Test Procedure (copy on file at FPC) and did sign the Source Inspection Plan indicating completion of the steps. He also provided additional details in a written report and attested to full compliance with purchase order (Statement of Conformance). In addition, the switches were fit into a monitor during the inspection and verified to be the correct ones. The issue of conflicting drawing revision levels was caused by mis-reading the vendors drawing during the inspection planning effort. The correct revision level is 5/28/88 as identified by the Inspection Report.

SUMMARY:

This again, is another case of the amount of objective evidence needed in a Source Inspection Report. As stated before, procedure changes in this area are being implemented to develop consistency in reports.