ATTACHMENT 1

ILLINOIS POWER COMPANY

OVERINSPECTION PROGRAM

PREPARED FOR:

U.S. NUCLEAR REGULATORY COMMISSION
OCTOBER 25, 1984
GLEN ELLYN, ILLINOIS

OVERINSPECTION PROGRAM

SUPPLEMENTARY INFORMATION

I. INTRODUCTION

A. ILLINOIS POWER COMPANY QUALITY IMPROVEMENTS (1982)

1. IMPROVED PROJECT MANAGEMENT
2. ENHANCEMENTS IN PROJECT QUALITY ASSURANCE
3. ENHANCEMENTS IN THE CONTROL OF NONCONFORMANCE AND THE CORRECTIVE ACTION PROGRAM
4. ENHANCEMENTS IN THE CONTROLS FOR CONSTRUCTION AND INSPECTION ACTIVITIES
5. OVERINSPECTION PROGRAM
6. RECORD VERIFICATION PROGRAM
7. OTHER ACTIVITIES WHICH VERIFY QUALITY
   a) THIRD PARTY AUDITS AND EVALUATIONS
   b) SPECIAL PROGRAMS
      1) 79-14 WALKDOWN PROGRAM
      2) SEISMIC INTERACTION ANALYSIS PROGRAM
      3) ELECTRICAL SEPARATION PROGRAM
      4) FIRE PROTECTION PROGRAM
      5) 50.55(e) AND PART 21 EVALUATIONS
   c) CONFIGURATION MANAGEMENT PROGRAM
   d) TURNOVER PROGRAM AND STARTUP TESTING PROGRAM
      1) SYSTEM/SUBSYSTEM TURNOVER PROGRAM
      2) STARTUP TESTING PROGRAM
   e) INDEPENDENT DESIGN REVIEW

B. THIS PRESENTATION EMPHASISES THE OVERINSPECTION PROGRAM AND THOSE OTHER RECOVERY EFFORTS WHICH SUPPORT OR ENHANCE ITS RESULTS

II. OVERINSPECTION PROGRAM OBJECTIVE

PROVE THAT THE STRUCTURES, SYSTEMS, AND COMPONENTS AT CLINTON POWER STATION ARE PROPERLY INSTALLED TO ASSURE SAFETY OF OPERATIONS.

III. OVERINSPECTION PROGRAM COMMITMENTS

COMMITMENT	PROGRESS ON COMMITMENTS
I. CONDUCT THREE PHASE OVERINSPECTION PROGRAM	
* I - REVIEW U.S. TESTING OVERINSPECTION ACTIVITY	*COMPLETE
* II - BA FIELD VERIFICATION OF OLD AND NEW WORK	*ONGOING
* III - IP OVERINSPECTION OF OLD AND NEW WORK	*ONGOING
II. ADDRESS SAFETY-RELATED, AUGMENTED CLASS D (RADWASTE) PROTECTION SYSTEMS, AS FOLLOWS:	ALL COMMODITIES HAVE BEEN OVERINSPECTED TO VARYING DEGREES
* LARGE BORE PIPING	
* SMALL BORE PIPING	
* MECHANICAL EQUIPMENT	
* STRUCTURAL STEEL	
* HEATING, VENTILATING AND AIR CONDITIONING (HVAC)	
* ELECTRICAL HANGERS	
* ELECTRICAL CONDUIT RACEWAY	
* ELECTRICAL TERMINATION	
* ELECTRICAL EQUIPMENT	
* INSTRUMENTATION - ELECTRICAL/MECHANICAL	

COMMITMENTS	PROGRESS ON COMMITMENTS
III. ADDRESS BOTH OLD AND NEW WORK (WORK PERFORMED BEFORE AND AFTER JULY 26, 1982)	SUBSTANTIAL AMOUNTS OF BOTH OLD AND NEW WORK HAVE BEEN OVERINSPECTED
IV. CONDUCT PROGRAM BASED ON 95/5 SAMPLE PLAN	THE MAJORITY OF WORK TO DATE HAS BEEN 100% INSPECTED
	95/5 HAS BEEN APPLIED WHEN SAMPLING WAS USED V.
V. EVALUATE PROGRAM FOR:	PROGRAM EVALUATIONS HAVE BEEN MADE
DECREASING SAMPLE BY CATEGORY OR CHARACTERISTIC	* ADJUSTMENTS HAVE BEEN MADE TO INSPECTION PROGRAM
TERMINATION OF INSPECTIONS BY CATEGORY	* NONE
ROOT CAUSE DETERMINATIONS AND CORRECTIVE ACTION	* ROOT CAUSE DETERMINATIONS HAVE BEEN MADE
VI. CONTINUE THE PROGRAM IN THE FUTURE	PROGRAM IS CONTINUING

IV. OVERINSPECTION PROGRAM STATUS

EFFECTIVE JULY 31, 1984 FIELD VERIFICATION HAD INSPECTED 6,762 TRAVELERS RESULTING IN 647,295 ATTRIBUTE INSPECTIONS AND HAD IDENTIFIED 28,208 NONCONFORMING ATTRIBUTES FOR AN OVERALL FV NONCONFORMANCE RATE OF 4.4%. OVERINSPECTION ADDITIONALLY INSPECTED 3,915 TRAVELERS RESULTING IN 477,156 ATTRIBUTE INSPECTIONS AND IDENTIFIED 6,690 NONCONFORMING ATTRIBUTES FOR AN OVERALL OI NONCONFORMANCE RATE OF 1.4%.

NUMBER OF ATTRIBUTES INSPECTED BY
BA AND IP UNDER THE OVERINSPECTION PROGRAM

NUMBER OF ATTRIBUTES INSPECTED BY BA FV	647,295
NUMBER OF ATTRIBUTES INSPECTED BY IP OI	477,156
TOTAL NUMBER OF INSPECTIONS	1,124,451
NUMBER OF ATTRIBUTES INSPECTED BY BOTH BA FV AND IP OI	285,448
TOTAL NUMBER OF DIFFERENT ATTRIBUTES INSPECTED	839,003

OVERINSPECTION PROGRAM RESULTS

GENERAL RESULTS

* IP INITIATED A REVIEW OF THE RESULTS OF THE OVERINSPECTION PROGRAM ON JULY 23, 1984.
  - ASSESS RESULTS IN TERMS OF PLANT QUALITY.
  - PROVIDE INFORMATION FOR PROGRAM MANAGEMENT ACTION.

* THE FIRST EVALUATION REPORT WAS COMPLETED AND REVIEWED BY IP, BA AND S&L ON OCTOBER 19, 1984.
  - OVERALL PLANT QUALITY IS GOOD.
  - SOME AREAS HAVE NOT ACCUMULATED A SUFFICIENT AMOUNT OF INFORMATION TO ALLOW CONCLUSIVE EVALUATION.
  - OTHER AREAS HAVE ACCUMULATED SUFFICIENT INFORMATION TO ALLOW CONCLUSIVE EVALUATION.
  - MANAGEMENT ACTION MAY BE TAKEN IN SOME AREAS WITH HIGH CONFIDENCE LEVELS.

OVERINSPECTION PROGRAM

SPECIFIC RESULTS

NONCONFORMANCE RATES BY CONSTRUCTION DISCIPLINE

TYPE OF INSPECTION	DISCIPLINE	NUMBER OF ATTRIBUTES INSPECTED	NUMBER OF NONCONFORMING ATTRIBUTES	NONCONFORMANCE RATE(%)
FV	STRUCTURAL	223,651	12,890	5.8
	ELECTRICAL/INSTRUMENTATION	171,527	5,627	3.2
	PIPING/MECHANICAL	226,114	8,855	3.9
	HVAC	20,003	836	4.2
	TOTAL	647,295	28,208	4.4
OI INSPECTION PRIOR TO FV	STRUCTURAL	86,367	2,563	3.0
	ELECTRICAL/INSTRUMENTATION	52,495	543	1.0
	PIPING/MECHANICAL	52,846	734	1.4
	HVAC	0	-	-
	TOTAL	191,708	3,840	2.0
OI INSPECTIONS AFTER FV	STRICTIRAL	155,031	2,465	1.6
	ELECTRICAL/INSTRUMENTATION	49,041	161	0.3
	PIPING/MECHANICAL	70,350	219	0.3
	HVAC	11,026	5	0.0
	TOTAL	285,448	2,850	1.0

NONCONFORMANCE RATES BY TYPE OF ITEM

	FV			OI		
ITEM	ATTRIBUTES INSPECTED	NONCONFORMING ATTRIBUTES	NONCONFORMANCE RATE (%)	ATTRIBUTES INSPECTED	NONCONFORMING ATTRIBUTES	NONCONFORMANCE RATE (%)
BEAMS AND STRUCTURAL STEEL	223,651	12,890	5.8	241,398	5,028	2.1
CABLE	5,808	88	1.5	2,639	16	0.6
CABLE TERMINATION	31,883	101	0.3	18,087	20	0.1
CONDUIT	3,269	54	1.7	511	0	0
CABLE TRAYS	649	24	3.7	0	-	-
ELECTRICAL BOXES	195	13	6.7	10	2	20.0
ELECTRICAL HANGERS	90,170	4,873	5.4	67,834	572	0.8
ELECTRICAL EQUIPMENT [1]	11,785	187	1.6	7,142	66	0.9
INSTRUMENTATION	153	0	0.0	102	0	0.0
INSTRUMENT PIPE	9,770	136	1.4	2,170	12	0.6
INSTRUMENT SUPPORT	23,845	151	0.6	3,041	16	0.5
LARGE BORE PIPE	27,062	2,850	10.5	13,583	182	1.3
SMALL BORE PIPE	42,223	2,086	4.9	48,221	313	0.6
MECHANICAL EQUIPMENT [2]	2,116	245	11.6	473	11	2.3
MECHANICAL SUPPORTS [3]	154,713	3,674	2.4	60,919	447	0.7
HVAC DUCT	9,007	495	5.5	5,391	0	0.0
HVAC HANGERS	10,996	341	3.1	5,635	5	0.1
TOTAL	647,295	28,208	4.4	477,156	6,690	1.4

1 INCLUDES ELECTRICAL PANELS AND SWITCHGEAR

2 INCLUDES COMPRESSORS, PUMPS, VALVES, AND MISCELLANEOUS EQUIPMENT

3 INCLUDES ANCHOR PLATES, EXPANSION ANCHORS AND HANGERS

NUMBER OF NONCONFORMANCES BY TYPE OF ATTRIBUTE

TYPE OF ATTRIBUTE	NUMBER OF NONCONFORMANCES	PERCENT OF TOTAL NUMBER OF NONCONFORMANCES
ARC STRIKE/SPATTER	8,544	24.5
FUSION/OVERLAP/UNDERCUT	6,298	18.0
WELD SIZE/PROFILE	6,275	18.0
INSTALLATION PER DESIGN	4,631	13.3
IDENTIFICATION	3,769	10.8
TOLERANCE	1,958	5.6
DAMAGE	1,262	3.6
SLAG	606	1.7
LOCATION	606	1.7
ALL OTHERS	954	2.7
TOTAL	34,898	100.0%

NONCONFORMANCE RATES FOR OLD WORK AND NEW WORK

FV INSPECTIONS

DISCIPLINE	TYPE OF WORK	NUMBER OF ATTRIBUTES INSPECTED	NUMBER OF NONCONFORMING ATTRIBUTES	NONCONFORMANCE Rate (%)
STRUCTURAL	OLD	223,651	12,890	5.8
	NEW	N/A	-	-
ELECTRICAL/ INSTRUMENTATION	OLD	87,166	3,721	4.3
	NEW	90,361	1,906	2.1
PIPING/ MECHANICAL	OLD	48,587	4,442	9.1
	NEW	177,527	4,413	2.5
HVAC	OLD	N/A	-	-
	NEW	20,003	836	4.2
TOTAL	OLD	359,404	21,053	5.9
	NEW	287,891	7,155	2.5

OVERINSPECTIONS

DISCIPLINE	TYPE OF WORK	NUMBER OF ATTRIBUTES INSPECTED	NUMBER OF NONCONFORMING ATTRIBUTES	NONCONFORMANCE RATE (%)
STRUCTURAL	OLD	241,398	5,028	2.1
	NEW	N/A	-	-
ELECTRICAL/ INSTRUMENTATION	OLD	79,987	465	0.6
	NEW	21,549	239	1.1
PIPING/ MECHANICAL	OLD	83,741	639	0.8
	NEW	39,455	314	0.8
HVAC	OLD	N/A	-	-
	NEW	11,026	5	0.0
TOTAL	OLD	405,126	6,132	1.5
	NEW	72,030	558	0.8

VI. OVERINSPECTION PROGRAM MANAGEMENT ACTION

STRUCTURAL STEEL

* THE OVERALL NONCONFORMANCE RATES FOR STRUCTURAL STEEL ARE NOT EXCESSIVELY HIGH
  - FIELD VERIFICATION 5.8%
  - OVERINSPECTION (BEFORE FV) 3.0%
  - OVERINSPECTION (AFTER FV) 1.6%

* THE NONCONFORMANCES REPORTED ARE NOT, IN GENERAL, SERIOUS WITH RESPECT TO PLANT SAFETY
* HOWEVER, ONE NONCONFORMANCE REPORT (NCR) WAS BEING GENERATED FOR NEARLY EVERY STRUCTURAL STEEL BEAM INSPECTED.
* WITH AT LEAST ONE NCR PER BEAM, SAMPLING, INSPECTION WILL NOT BE ACHIEVABLE.

PROGRAM MANAGEMENT ACTION

* INSTITUTED 100% REINSPECTION BY THE IP OVERINSPECTION GROUP OF STRUCTURAL STEEL BEAMS ON OCTOBER 1, 1984.

PIPING AND PIPE SUPPORTS

* BASED ON INITIAL EVALUATION, HARDWARE QUALITY IS ADEQUATE TO ASSURE SAFE, RELIABLE OPERATION OF CPS

FV NONCONFORMANCE RATES FOR CLD PIPING/MECHANICAL WORK

ITEM	NUMBER OF ATTRIBUTES INSPECTED	NUMBER OF NONCONFORMING ATTRIBUTES	NUMBER OF ARC STRIKES & WELD SPATTER	NONCONFORMANCE RATE EXCLUDING ARC STRIKES
LARGE BORE PIPE	12,298	2,269	1,681	4.8
SMALL BORE PIPE	17,203	1,251	922	1.9
MECHANICAL EQUIPMENT [1]	913	71	24	5.2
MECHANICAL SUPPORTS [2]	18,173	851	398	2.6
TOTAL	48,587	4,442	3,025	3.0

[1] INCLUDES COMPRESSORS, PUMPS, VALVES, AND MISCELLANEOUS EQUIPMENT

[2] INCLUDES ANCHOR PLATES, EXPANSION ANCHORS, AND HANGERS

ACTIONS TO BE TAKEN

REMOVE LARGE AND SMALL BORE PIPE AND MECHANICAL SUPPORTS FROM OVERINSPECTION PROGRAM

INSTITUTE TASK FORCE FOR ARC STRIKES ON THESE COMMODITIES

EVALUATE ARC STRIKE RESULTS FOR SIGNIFICANCE - POTENTIALLY REDUCE SCOPE OF PROGRAM

ELECTRICAL HANGERS

COMMITMENTS	PROGRESS ON COMMITMENTS
* INSPECTION BY BA QUALITY CONTROL	* COMPLETE FOR OLD WORK
* 100% REINSPECTION BY BA QUALITY AND TECHNICAL SERVICES OF OLD WORK	* ONGOING
* RANDOM SAMPLE VERIFICATION BY BA FIELD VERIFICATION	* ONGOING
* RANDOM SAMPLE VERIFICATION BY IP OVERINSPECTION	* ONGOING

FIELD VERIFICATION NONCONFORMANCE RATES FOR OLD WORK

NUMBER OF ATTRIBUTES INSPECTED	NUMBER OF NONCONFORMING ATTRIBUTES	NUMBER OF ARC STRIKES & WELD SPATTER	NONCONFORMANCE RATE EXCLUDING ARC STRIKES
61,127	3,665	1,285	3.9

REQUESTED NRC ACTION

EVALUATE ANSWER PROVIDED TO ILLINOIS POWER COMPANY IN NRC LETTER J. G. KEPPLER (RIII) TO W. C. GERSTNER, 9-17-84; "BA FIELD VERIFICATION/IPC OVERINSPECTION" REGARDING THE NECESSITY TO CONTINUE OVERINSPECTION PROGRAM ACTIVITIES FOR ELECTRICAL HANGERS.

OTHER COMMODITIES

* HVAC (DUCT & HANGERS)
* CONDUIT AND ELECTRICAL BOXES
* CONDUIT HANGERS
* CABLE
* CABLE TERMINATIONS
* ELECTRICAL EQUIPMENT
* INSTRUMENT SUPPORTS
* INSTRUMENT PIPING
* INSTRUMENTATION
* MECHANICAL EQUIPMENT

ILLINOIS POWER COMPANY

OVERINSPECTION PROGRAMS

SUPPORTING VERIFICATION PROGRAMS

PIPING

A. DESIGN INPUT VERIFICATION

* 55-82-10 - PIPE MINIMUM WALL VIOLATIONS
  - ° S&L REVIEWED STRESS ANALYSIS INPUT REQUIREMENTS
  - ° S&L VERIFIED PIPE LINE LIST
  - ° S&L REVIEWED ALL LARGE BORE, ISOMETRICS FOR CORRECT INFORMATION
  - ° DATA IS EVALUATED FOR IMPACT ON CALCULATION/SAFETY

B. DESIGN CALCULATION REVIEW/VERIFICATION

* 55-82-09: REVIEW OF SMALL BORE, INSTRUMENTATION AND CONDUIT CALCULATIONS

  - ° REVIEW/VERIFICATION OF S&L METHODS/SUBSTANTIATION OF SIMPLIFIED ANALYSES METHODOLOGIES
  - ° S&W ENGINEERS REVIEWED S&L SMALL BORE PROCEDURE
  - ° NSED ENGINEERS REVIEWED A PERCENTAGE OF S&L SMALL BORE CALCULATIONS
  - ° CALCULATIONS WERE REVISED AND CORRECTED WHERE NECESSARY
  - ° S&L PROVIDED ADDITIONAL TRAINING/SUPERVISION TO DESIGNERS

* IP/NSED REVIEW OF S&L LARGE BORE CALCULATIONS

  - ° CONTINUOUS EVALUATION OF S&L CALCULATIONS BY NSED (TRAINING PROVIDED TO NSED)
  - ° S&L REVISES CALCULATIONS WHEN NECESSARY
  - ° NSED DOES SAMPLE STRESS CALCULATIONS ON THE PROGRAM NUPIPE TO VERIFY/CHECK S&L RESULTS
  - ° INPO FINDING ON CLASS I ANALYSIS HAD INDEPENDENT REVIEW BY S&W ENGINEERS ON S&L METHODS. S&L FORMALIZED THE METHODS AND CALCULATION FORMATS FOR CLASS I ANALYSIS
  - ° NSED FOLLOWS STRESS ANALYSIS THROUGH TO THE PIPE SUPPORT DESIGN CALCULATIONS TO ASSURE THE INFORMATION TRANSFER IS CORRECT AND CURRENT
  - ° AS-BUILTS ARE DRAWN FOR STRESS RECONCILIATION (I&E 79-14)

C. FABRICATION VERIFICATION

* 55-82-10: APPROVED ISOMETRICS ARE USED TO VERIFY FABRICATION
* 55-83-07: SOUTHWEST FABRICATION RADIOGRAPH REVIEW

  - ° REREAD ALL RADIOGRAPHS FOR PIPE SUPPLIED TO BA BY SWF: 3,000 WELDS; 19,000 PIECES OF FILM
  - ° REPAIR 104 WELDS
  - ° HAD INDEPENDENT AUDITS OF THE FILM REVIEW

* 55-84-05: INCORRECT MATERIAL SUBSTITUTION

- ° REVIEW BY BA RESIDENT ENGINEER OF APPROVED ISOMETRICS FOR MATERIAL ADDED BY BA WHEN MODIFYING SWF SPOOLS
- ° VERIFY MATERIAL ADDED THRU P.O./RIR/CMTR REVIEW
- ° S&L REVIEWED ALL DEFICIENCIES FOR SAFETY. SOME REWORK REQUIRED BUT NO ADVERSE CONDITIONS IDENTIFIED
- ° PROCEDURE CHANGES TO VERIFY PIPE AT RELEASE FROM STORAGE

* 55-84-04: HEAVY FITTING SUBSTITUTION

- ° REVIEW ALL SWF ISOMETRIC/SPOOL DRAWINGS FOR SUBSTITUTION OF FITTINGS HEAVIER THAN SPECIFIED
- ° S&L REVIEWS ALL SUBSTITUTIONS FOR IMPACT ON STRESS ANALYSIS AND SAFETY SIGNIFICANCE (NO ADVERSE CONDITIONS IDENTIFIED)

* 55-83-02: COUNTERBORE OF SAFETY RELATED PIPE

- ° REVIEW ALL ISOMETRICS AND IDENTIFY JOINTS WITH NOMINAL I.D. MISMATCH GREATER THAN 1/16 AND WHICH MAY REQUIRE COUNTERBORE/I.D. GRINDING
- ° S&L AND ANI CONCUR WITH METHODS USED TO IDENTIFY SUSPECT JOINTS
- ° DEVELOP PROCEDURE WITH VARIABLE ULTRASONIC TEST (UT) PROBE TO DETERMINE ANGLE OF INCLINE OF FINISHED JOINTS
- ° DEMONSTRATE THE METHOD ON KNOWN COUPONS TO THE ANI, QA, NRC, S&L
- ° S&L APPROVED THE PROCEDURE AND ANI CONCURRED
- ° QUALIFY UT OPERATORS ON TEST COUPONS PRIOR TO PERFORMING PRODUCTION WELDS
- ° INSPECT 515 JOINTS AND REWORK 95

D. AS-BUILT PROGRAM:

* AS-BUILTS ARE PREPARED TO GIVE INFORMATION TO S&L FOR STRESS ANALYSIS RECONCILIATION AND COMPLIANCE WITH I&E 79-14 REQUIREMENTS AND ASME N-5 SIGN-OFF.

E. MATERIAL VERIFICATION/DOCUMENT REVIEW EFFORT

* 55-84-11: UNCERTIFIED FLANGES INSTALLED IN ASME SYSTEMS

- SEARCH OF RECORDS AND TRAVELERS FOR FLANGES PURCHASED WITHOUT PROPER ASME CERTIFICATION FROM THE VENDOR
- 77 WERE IDENTIFIED AND WERE REMOVED FROM THE PLANT

* 55-84-02: MATERIAL TRACEABILITY

- NO MATERIAL HAS BEEN FOUND THAT DOES NOT MEET THE SPECIFICATION REQUESTED
- UNIQUE TRACEABILITY IS NOW PROVIDED BY HEAT NUMBER OR BA RECEIVING IDENTIFICATION NUMBER
- MATERIAL TEST PROGRAM UNDERWAY

* 55-84-09: CERTIFICATION OF PENETRATION HEAD FITTINGS

- FIND AND REPLACE AND/OR TEST PLATE STEEL WITHOUT PROPER ASME CERTIFICATION USED IN CONTAINMENT HEAD FITTINGS

- I&E BULLETIN 83-01: RAY MILLER CO. FRAUDULENTLY SUPPLIED MATERIAL. NO MATERIAL FOUND AT CPS FROM RAY MILLER CO.

- I&E BULLETIN 83-06: TUBE LINE NONCONFORMING MATERIAL. IP IS STILL EVALUATING THE MATERIAL RECEIVED AT CPS FROM TUBELINE

- G.E. LETTER PRC-84-18: G.E. SUPPLIED PIPE: MICROFISSURING OF 316NG RECIRCULATION PIPE. CPS DID NOT RECEIVE THE TYPE OF MATERIAL/PIPING PIECES DESCRIBED

- I&E BULLETIN 83-02: STRESS CORROSION CRACKING IN STAINLESS STEEL RECIRCULATION PIPING. IP HAS TAKEN STEPS TO PREVENT THIS PROBLEM.

F. DOCUMENT REVIEW GROUP:

* REVIEW SAFETY-RELATED TRAVELERS FOR REQUIREMENTS OF MATERIAL, ETC., AND VERIFY THROUGH THE REVIEW OF PURCHASE ORDERSS, RECEIVING INSPECTION REPORTS, CERTIFIED MATERIAL TEST REPORTS AND QUALIFICATION RECORDS THAT WHAT IS REQUIRED BY THE DESIGN IS INSTALLED IN THE PLANT. (PIPE, FITTINGS, VALVES, WELD ROD, OTHER MATERIAL, ETC.)

* DOCUMENT EXCEPTION LIST ITEMS WRITTEN TO OBTAIN ENGINEERING, QA RESOLUTION

* NCRs WRITTEN FOR NONCONFORMING CONDITIONS AND ENGINEERING EVALUATIONS

ILLINOIS POWER COMPANY

SUPPORTING VERIFICATION PROGRAMS

PIPE SUPPORTS

A. 55-82-11: INCORRECT WELD PROCEDURE MATERIAL I.D. ON PIPING HANGER TRAVELERS

REVIEWED 10,000 TRAVELERS FOR PROPER MATERIAL IDENTIFICATION SO THAT THE CORRECT WELDING PROCEDURES WOULD BE ASSIGNED

° REWORKED SEVERAL HANGERS - S&L EVALUATED SAFETY SIGNIFICANCE WITH NO ADVERSE CONDITIONS BEING IDENTIFIED

B. 55-82-12: BINDING OF SWAY STRUT/SNUBBER PIPING COMPONENT SUPPORTS

* REVIEWED/MEASURED GREATER THAN 3000 STRUTS AND SNUBBERS TO ASSURE PROPER CLEARANCE IS PRESENT IN THE END BRACKETS AND PIPE CLAMPS TO ASSURE NO BINDING WHEN THE PIPE GROWS THERMALLY

* REWORKED GREATER THAN 800 HANGERS

C. 10CFR21: INVESTIGATION OF GE PIPE CLAMPS FOR CONTROL ROD DRIVE INSERT AND WITHDRAW PIPING

* IDENTIFIED THAT THE CLAMPS SUPPLIED BY GE ON THE INSERT AND WITHDRAW PIPING WERE NOT ASME SUBSECTION NF QUALIFIED AND DID NOT HAVE DESIGN CAPACITY TO WITHSTAND THE PIPING LOADS

* DESIGNED NEW CLAMP AND REPLACED ALL OF THOSE SUPPLIED BY GE

D. 55-84-02: MATERIAL TRACEABILITY

* NO MATERIAL HAS BEEN FOUND THAT DOES NOT MEET THE SPECIFICATION REQUESTED

* UNIQUE TRACEABILITY IS NOW PROVIDED BY HEAT NUMBER OR BA RECEIVING IDENTIFICATION NUMBER

* MATERIAL TEST PROGRAM UNDER WAY

E. 55-84-03: CONCRETE EXPANSION ANCHORS

* VERIFIED HILTI EXPANSION ANCHORS USED IN PIPE SUPPORTS, INSTRUMENTATION SUPPORTS., et.al, WILL PERFORM DESIGN FUNCTIONS (ALSO NON-SAFETY INSTALLATIONS)

* TESTED A SAMPLE OF 290 PIPING HANGER INSTALLATIONS AND FOUND NO CONDITIONS ADVERSE TO SAFETY AFTER S&L REVIEW

* CHANGED PROCEDURES AND TRAINED CRAFT FOR PROPER INSTALLATION AND QC PERSONNEL FOR PROPER INSPECTION

* ALL HILTI EXPANSION ANCHORS ARE END STAMPED FOR LENGTH VERIFICATION AND WILL ONLY BE ISSUED TO CRAFT PERSONNEL WHO ARE QUALIFIED TO INSTALL THEM.

F. 55-84-12: CONCRETE EXPANSION ANCHORS IN FINISHING SLABS

* AS-BUILT ALL HANGERS WITH HILTI EXPANSION ANCHORS EMBEDDED IN FINISHING SLABS
* S&L WILL EVALUATE THESE FOR THEIR ABILITY TO PERFORM DESIGN FUNCTIONS

G. NSED REVIEW OF HANGER CALCULATIONS

* NSED PERSONNEL REVIEWED S&L LARGE BORE PIPE STRESS CALCULATIONS AND VERIFIED THE LOADS GENERATED AND TYPE OF HANGER REQUIRED BY THE STRESS REPORT ARE ACTUALLY USED AND DESIGNED PROPERLY

H. OTHER ISSUES EXPLORED

* SITE THREADING OF ROD STOCK FOR PIPE SUPPORTS

  NO SIGNIFICANT ISSUES

* ASME SUBSECTION NF BOUNDRY

  STILL UNDER INVESTIGATION

* THREADS OF BOLTS IN PIPE CLAMPS BEING INCLUDED IN THE SHEAR PLANE

  NO SIGNIFICANT PROBLEMS