UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION V
1990 N. CALIFORNIA BOULEVARD
SUITE 202, WALNUT CREEK PLAZA
WALNUT CREEK, CALIFORNIA 94596

October 3, 1980

MEMORANDUM FOR: G. S. Spencer, Chief, Reactor Construction and Engineering Support Branch

FROM: Regional Evaluation Review Board: WNP-1 and WNP-4

SUBJECT: REGIONAL EVALUATION OF WNP-1/4 PROJECT

The Regional Evaluation Review Board met on September 5, 1980 to perform the evaluation of project activities for the period of May 29, 1979 through July 18, 1980. The board reviewed the following areas:

a. Previous enforcement actions and results
b. Responsiveness and effectiveness of corrective actions taken regarding adverse findings identified as a result of the licensee's quality assurance program and NRC inspections.
c. Licensee actions in the areas of IE Bulletins and Licensee Event Reports, 50.55(e) and Part 21.

It is the opinion of the Board, based on the results of the review, that the licensee's performance warrants improvement in the following areas:

a. Assuring that PSAR commitments are fully and properly translated into specifications.
b. Assuring that specification and referenced codes and standards are adequately translated into work and inspection procedures.
c. Assuring that contractor quality documentation for civil work reflect compliance with codes, specifications and procedures prior to turnover of the documentation to the licensee.
d. Assuring that corrective actions for adverse findings are effective and timely.
e. Assuring that contractor training activities are effective and that craft and inspection personnel are sufficiently knowledgeable and disciplined in the execution of the requirements of the work and inspection procedures.

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In addition, it is the opinion of the Board that NRC:RV inspection efforts should be increased in the areas of: inspection of quality assurance programs of the various contractors with emphasis on the quality of the work and inspection procedures; and the scope and quality of training provided craft and inspection personnel regarding the contractor specific procedures. Also, additional inspection effort appears warranted in the area of the installation of piping and hangers in view of the six items of noncompliance identified by NRC inspectors in this area during the appraisal period.

Licensee actions related to IE Bulletins and licensee event reports were generally satisfactory. No specific change in licensee programs or NRC inspections in these areas is recommended at this time.

Regional Review Board Members:

R. C. Haynes, Chief, Reactor Projects Section

T. W. Bishop, Resident Inspector

D. F. Kirsch, Reactor Inspector

for A. D. Toth, Resident Inspector

Enclosure:
WNP 1/4 Evaluation Form
for Appraisal Period 5/29/79 - 7/18/80

APPENDIX B

REGION V

LICENSEE PERFORMANCE EVALUATION (CONSTRUCTION)

Facility: Washington Nuclear Project Unit 1 and Unit 4

Licensee: Washington Public Power Supply System

Unit Identification:

Docket No.	CP No./Date of Issuance	Unit No.
50-460	CPPR-134 Dec. 23, 1975	1
50-513	CPPR-174 Feb. 21, 1978	4

Reactor Information:	Unit 1	Unit 4
NSSS	B&W	B&W
MWt	3600	3600

Appraisal Period:

May 29, 1979 through July 18, 1980

Appraisal Completion Date:

September 5, 1980

Review Board Members:

T. Bishop, Reactor Inspector (assigned as regional principal inspector for WNP 1/4 during appraisal period)

A. Toth, Reactor Inspector (assigned as resident inspector at WNP 1/4 from October 1, 1979 to July 1, 1980)

D. Kirsch, Reactor Inspector (current regional principal inspector for WNP 1/4)

R. Haynes, Chief, Projects Section, Reactor Construction & Engineering Support Branch

A. Number and Nature of Noncompliance Items: (See Attachment 1)

Noncompliance category:	Unit 1	Unit 4
Violations	0	0
Infractions	8	2
Deficiencies	1	0

Areas of Noncompliance: (List Areas as Required)	Unit 1 (Points)	Unit 4 (Points)
Calibration Procedures	10	10
Piping/Hangers Field Welds	20	
Pipe Hanger Rework	10	
Pipe Support Shop Welds	10	
Equipment Protection	10	10
Structural Steel Shop Welds	10	
Concrete Placement	10	
Cable Tray Support Welds	2	
Total Points	82	20

B. Number and Nature of Deficiency Reports

(See Attachment 2)

C. Bulletins

Generally Bulletins have been responded to in a satisfactory and timely manner. (See Attachment 3)

D. Escalated Enforcement Actions

Civil Penalties

- None -

Orders

- None -

Immediate Action Letters

- None -

Other

80-06 Letter re: Ineffective Corrective Actions. (Region V Director Letter of July 11, 1980)

E. Management Conferences Held During Past Twelve Months

- None -

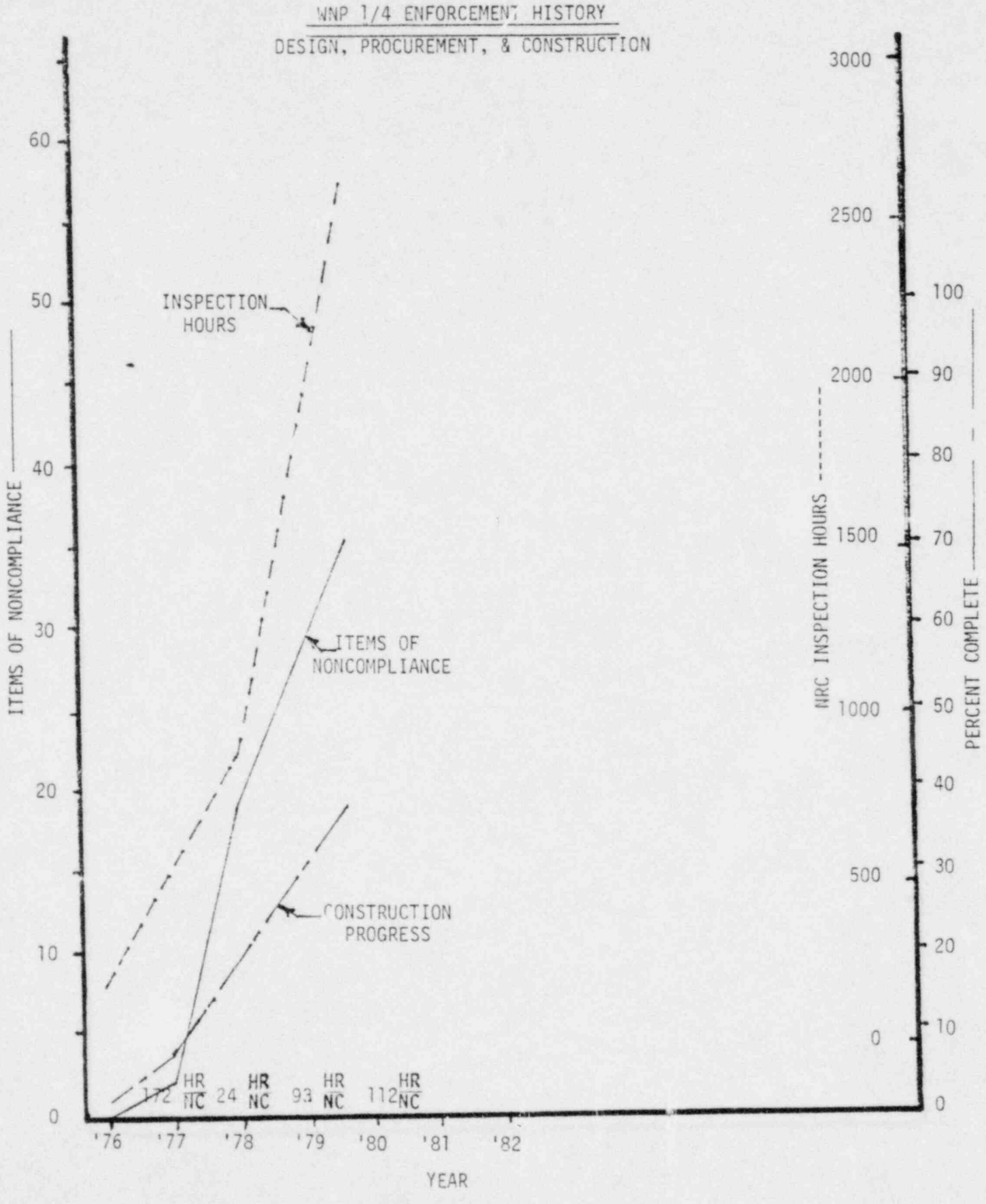
F. Justification of Evaluations of Functional Areas Categorized as Requiring an Increase in Inspection Frequency/Scope (See evaluation sheet)

See Attachment 4

ENFORCEMENT HISTORY

PLANT/PROJECT	YEAR	INSPECTOR HOURS	INFRACTIONS	DEFICIENCIES	DEVIATIONS	% COMPLETE AT YR START	INSP. HOURS PER ENF. ACTION
WNP 1/4	*1980	674	6	0	1	30/15	112
	1979	927	6	4	4	20/8	93
	1978	410	13	4	0	8/3	24
	1977	345	1	1	0	3/0	172
	1976	56	0	0	0	0	NA
	1975	120 (est.)	0	0	0	0	NA

* 1980 DATA IS THROUGH JULY 18, 1980


WNP 1/4 ENFORCEMENT HISTORY
DESIGN, PROCUREMENT, & CONSTRUCTION
ITEMS OF NONCOMPLIANCE
NRC INSPECTION HOURS
PERCENT COMPLETE
INSPECTION HOURS
ITEMS OF NONCOMPLIANCE
CONSTRUCTION PROGRESS
172 HR / NC
24 HR / NC
93 HR / NC
112 HR / NC
'76
'77
'78
'79
'80
'81
'82
YEAR
0
10
20
30
40
50
60
500
1000
1500
2000
2500
3000
70
80
90
100

POOR ORIGINAL

ENFORCEMENT ACTION WNP 1/4

ITEM	DESCRIPTION	ISSUED NOTIFIED DATE	RESPONSE REQ. DATE	RESPONSE RECEIVED	RESP. LTR. NO./DATE	REPORT CLOSED
INF	Inadequate procedure for calibration & control of measuring & test equip. (WNP 1/4)	79-07-01 07-25-79			G01-79-471 08-28-79	80-06
INF	AWSH: Failure to remove standing water/improper consol'dation technique (WNP 1)	79-10-03 79-10-02 (Rpt No 79-11) 12-04-79			G01-8008 01-03-80	
INF	Excessive weld weave on pipe weld: JAJ (WNP 1)	79-13-02 01-16-80			G01-80-79 02-19-80	
INF	JAJ: Failure to adequately specify temporary weld controls (WNP 1)	80-01-01 04-07-80			G01-80-140 05-07-80	
INF	Inadequate shop fillet welds on pipe hangers (WNP 1)	80-01-02 04-07-80			G01-80-140 05-07-80	
INF	Failure to properly store/preserve safety related equipment (WNP 1/4)	80-06-01 07-11-80			G01-80-225 08-13-80	
INF	Failure to control work on completed supports (WNP 1)	80-06-02 07-11-80			G01-80-225 08-13-80	
DEF	Undersize fillet welds on raceway supports (WNP 1)	80-07-01 06-26-80			G01-80-210 07-25-80	
INF	Undersize shop welds in structural steel (WNP 1)	80-10-01 07-17-80			G01-80-231 08-19-80	

ATTACHMENT 2

50.55(e) WNP 1/4

POOR ORIGINAL

ITEM	DESCRIPTION	ISSUE/ NOTIFIED DATE	RESPONSE REQ. DATE	RESPONSE RECEIVED	RESP. LTR. NO./DATE	REPORT CLOSED
	Makeup Pump Speed Increaser Supports	10-01-79			G01-79-533 10-18-79	
	Superstrut Spot Welds	10-31-79		Interim Report	G01-79-576 11-30-79	
	WKM Valve Cracks	12-07-79		Interim Report	G01-80-10 01-07-80	
	Pipe Supports	01-04-80			G01-80-50 01-24-80	
	Nonconforming Retaining Clips-WKM Valves	01-30-80			G01-80-68 02-12-80	
	Vertical Amplified Response Spectra (Seismic)	06-11-80			Interim G01-80-199 07-11-80	

ATTACHMENT 3

POOR ORIGINAL

IE Bulletins
(Replys Req'd.)

WNP 1/4
5/79 - 7/80

ITEM	DESCRIPTION	ISSUED/ NOTIFIED DATE	RESPONSE REQ. DATE	RESPONSE RECEIVED	RESP. LTR. NO./DATE	REPORT CLOSED
79-11	Faulty Overcurrent Trip Device	5/22/79	7/22/79	8/6/79	no number	
79-14	As built Seismic Analysis	7/02/79	11/02/79	9/7/79	G01-79-476	
79-15	Deep Draft Pumps	7/11/79	9/11/79	(To IE:HQ)		
79-23	Failure of Transformer	9/12/79	10/27/79	11/12/79	G01-79-558	
79-24	Frozen Lines	9/27/79	10/31/79	*		
79-25	WEC BFD Relay Failure	11/02/79	01/02/80	2/11/80[1]	G01-80-66	
79-28	Possible Limit Switch Problem	12/07/79	02/07/80	2/11/80	G01-80-67	
80-03	Loss of Charcoal	2/06/80	03/21/80	3/19/80	G03-80-547	
80-05	CVCS Tank Damage	3/10/80	06/10/80	6/12/80	ELE-GCS-80-175	
80-08	Examination of Liner Penetration Welds	4/07/80	7/07/80	7/10/80	G01-80-198	
80-09	Hydramotor Actuators	4/17/80	06/17/80	7/2/80	G01-80-193	
80-16	Misapplication of Pressure Transmitters	7/17/80		8/7/80	G01-80-222	

*Response delayed due to extenuating circumstances.

[1] Extension requested and granted

WNP 1/4

ATTACHMENT 4

Experience during this appraisal period indicates that the licensee needs to direct additional attention towards assuring that the architect-engineer's specifications include the relevant commitments made by the licensee in the PSAR. Similarily, additional attention is needed to assure that contractor QA programs and procedures include the relevant requirements delineated in the architect-engineer's specifications. Examples of these shortcomings are included in items A and B of this attachment which follow.

In addition, the licensee's actions to correct certain matters discussed during enforcement conferences in May and June, 1978, with Region V management have not been fully effective. These matters include:

Strengthen Quality Control

Although the licensee has taken steps in strengthening quality within the crafts and QC/QA organizations, additional actions are still warranted as evidenced by items C, D and E of this attachment.

Shorten Response Time

While the licensee has completed committed actions to shorten the time to respond to and correct known quality problems these actions have not been sufficient to eliminate these problems. Refer to item D.

Expose Trends and Recurring Problem and Resolve Them

Licensee action has not been fully effective in avoiding recurring problems and resolving them in a timely manner. Refer to items D and E.

Bring About Improved Construction Manager and Contractor Responsiveness

Although committed actions have been completed these actions have not been wholly successful in achieving immediate and effective responses from site contractors. Refer to item D.

Raise QA Within WPPSS

Committed actions are completed, and effective except as noted above.

Increase WPPSS/CM Management Attention to Quality Problems

Committed actions are completed, and effective except as noted.

Strengthen Bid Reviews in Area of QA Responsibility

Committed actions are completed, and effective except as noted above.

A. Translation of PSAR Commitments to Specifications

The licensee has not been fully effective in assuring that PSAR commitments are translated into specifications and procedures, or alternatively, that deviations are without exception evaluated in accordance with the system to assure incorporation into the FSAR. During the February, 1979 QA inspection of the previous period an item of noncompliance was cited regarding a specific failure in this regard. During the current period, three cited PSAR deviations plus a relevant unresolved item were described. Some of the items involve mitigating circumstances; however, the evidence indicates attention to PSAR commitments is lacking. Until recently, WPPSS engineering review checklists for specification reviews did not include a specific item regarding PSAR commitment verification.

Examples of Failure to Translate PSAR Commitments to Specifications

1. The PSAR commitment to impose AWS-SFA-5.5 requirements for weld material for reactor coolant pressure boundary piping were not included in the specifications -- lesser requirements were specified.

2. ACI-318 requirements for neat cement grout treatment of construction joints of the spray pond were not specified or accomplished.

3. ANSI-N45.2.2 requirements to control access of personnel to class C equipment storage areas were not addressed in the specification nor were wholly comparable access controls provided.

4. Regulatory Guide 1.31 requirements for delta ferrite tests of weld material for stainless steel welding were not included in the specification.

B. Translation of Specification Requirements Into Construction Inspection Procedures

The Supply System (WPPSS) has not been fully effective in assuring that specification requirements are translated into procedures for construction and inspection work performance.

Examples of Specification Requirements Not Translated Into Procedures

1. Calibration program requirements, including techniques and frequency of calibration of measuring and test equipment, were not included in the contractor's procedures nor fully accomplished.

2. Welding and weld inspection requirements for temporary attachments to structural steel were not included in the contractor's procedures nor accomplished.

3. Inspection of valve orientation prior to welding is not addressed in the work or inspection procedures nor other objective evidence provided to assure such inspections were performed.

4. Examination of thermal expansion effects on preliminary alignment of equipment is not included in the procedures nor considered.

C. Completeness and Accuracy of Quality Records

The licensee received allegations in May, 1979, regarding apparent discrepancies in the quality assurance program of the concrete contractor, AWSH. Included were allegations of documentation problems. The licensee's investigation of the allegations confirmed that various problems existed. Our review of the licensee's investigation findings and the results of an NRC investigation in this area in May, 1980 and the licensee's recent reviews of containment wall concrete records indicate that the documentation problems may not be fully resolved at this time nor that documentation discrepancies will be resolved by AWSH prior to the turnover of the documents to the licensee.

D. Incomplete, Ineffective and Delayed Corrective Actions

The licensee's corrective actions on adverse quality findings have occasionally been incomplete, ineffective or untimely. This is characterized by insufficient thoroughness in followup actions.

Examples of Incomplete, Ineffective and Delayed Corrective Actions

The WPPSS investigation of concrete practices identified several deficient areas in May, 1979. It took one year to effect the required actions to correct the deficient practices. Other examples include:

1. Protection of equipment has been a continuing concern culminating in a noncompliance citation and an associated special NRC request for attention to this area.

2. Calibration and test requirements had not been incorporated into work procedures, contrary to commitments made in reply to a previous citation regarding this matter.

3. After questions raised by an NRC inspector, WPPSS performed evaluation and repair of a weldolet weld without identification of the necessary weld size. Final corrective action required continued NRC inspector inquiry.

4. The licensee has not effectively addressed the question of chloride contamination on stainless steel surfaces. There has been indecision in determining the measuring techniques and acceptance criteria. The effects of concrete curing water in the RPV, high chlorides in fire retardant paint on wood blocking for stainless steel piping and unidentified foreign material on stainless steel piping have been in question for months.

E. Contractor Training and Discipline

The licensee has not been fully effective in assuring effective contractor training programs are implemented. The licensee's investigation of allegations in May, 1979, regarding the concrete contractor, and the NRC investigation in May, 1980, of similar allegations revealed weaknesses in training QA personnel to current procedures. The variety of noncompliances and unresolved items identified by NRC inspectors indicate that this weakness extends to construction personnel and to other contractor activities.

Various corrective actions have been taken by the supply system, including special training in response to specific NRC findings. For general technology training, training materials have been disseminated to contractors and training coordinators. Continued efforts are warranted.

Examples of Weakness in Contractor Training

1. Neither welders nor inspectors were observing weld weave limitations on stainless steel piping.

2. Workers tampered with completed, inspected and tagged pipe hangers without notifying QA inspectors.

3. Concrete placement techniques in use were weak regarding water on construction joints and consolidation practices.

4. Neither welders nor inspectors were observing the limitations on electrical parameters for RCPB piping welding.

5. Inspection hold points were bypassed by crafts.

6. Personnel were using "Requests for Information" to obtain resolution of nonconforming conditions which should have had nonconformance report system controls applied.

7. Inspection personnel not familiar with the pipe wall thickness verification requirements pursuant to removal of surface defects.

8. Weld procedures were not readily accessible to welders nor readily available in work areas.

9. Training of welders on job procedures was weak.

10. The night shift craft foremen was not trained relative to concrete survey work procedures.