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COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

U.S. HOUSE OF REPRESENTATIVES
WASHINGTON, D.C. 20515

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September 28, 1983

Nunzio J. Palladino
Chairman
U.S. Nuclear Regulatory Commission
1717 H Street, N.W.
Washington, D.C. 20555

Dear Mr. Chairman:

The Bonneville Power Administration (BPA) has already paid over \$1.5 billion in interest on debt issued to finance Nuclear Projects Nos. 1, 2 and 3 of the Washington Public Power Supply System (WPPSS) and is apparently responsible for paying all costs associated with WPPSS 1 and 2, and 70% of WPPSS 3, whether or not these plants are ever capable of operating within NRC safety requirements. As Chairman of the Subcommittee on Mining, Forest Management, and BPA, I am vitally interested in what BPA has bought for all these billions of dollars.

Following recent congressional hearings on NRC investigation practices, my staff reviewed the report of the Office of Inspector and Auditor (OIA) concerning the April 1982 release of a draft inspection report to WPPSS by a Region V inspector, Paul Narbut. This OIA report, dated June 15, 1982, primarily addressed events at WPPSS 1 and 4. But the records of the investigation also show possible improper conduct by the NRC inspectors assigned to WPPSS 2.

Specifically, the OIA report (at pages 19, 40 & 54) reveals that, on at least one occasion, NRC inspectors shared with WPPSS a draft document listing over 200 potential problems at WPPSS 2. It is unclear from the OIA report whether some or all of these problems were discussed or resolved in any subsequent official inspection report or whether the NRC has investigated this apparently improper release of draft documents to the licensee.

I now ask NRC to provide the following further information on these events concerning WPPSS 2:

1. What were the potential problems or safety concerns contained in the draft documents shown to the WPPSS 2 personnel? Please provide the Subcommittee with all

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PDR COMMS NRCC
CORRESPONDENCE PDR

draft documents shared with WPPSS as well as a summary and explanation of the potential problems and their significance.

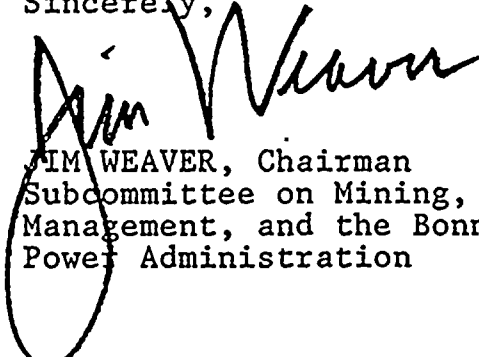
2. How were these potential problems subsequently handled? Has any discussion of these problems appeared in official, public NRC documents? Please indicate how each potential problem in the draft documents has been resolved.
3. Have OIA staff or other NRC personnel ever recommended or undertaken any investigation of the possible impropriety of the inspectors' conduct in releasing draft documents to WPPSS 2 personnel? If so, what were the results of the investigation? If not, why not?

I would like a written response to these questions as soon as possible, along with all reports, studies, correspondence, memoranda or other documents pertinent to these events. Please also provide a list of all documents, including internal staff reports and memoranda, on quality assurance, quality control, design deficiencies, or management problems at WPPSS 2 which were written by, sent to, or routed through NRC since 1980. This list need not include documents contained in the public records of NRC proceedings.

With WPPSS 2 now in its "start up and operation" phase, it is important that the people of the Northwest can be assured that the plant has been designed and constructed in accordance with NRC requirements and that public scrutiny of potential problems has not been thwarted by improper conduct of NRC employees.

Thank you for your assistance.

Sincerely,



JIM WEAVER, Chairman
Subcommittee on Mining, Forest
Management, and the Bonneville
Power Administration

RESPONSES TO QUESTIONS

QUESTION 1:

What were the potential problems or safety concerns contained in the draft documents shown to the WPPSS 2 personnel? Please provide the Subcommittee with all draft documents shared with WPPSS as well as a summary and explanation of the potential problems and their significance.

RESPONSE:

The findings of NRC's investigation into the allegations and concerns obtained during this investigation were such that they represented a significant failure on the part of WPPSS to comply with NRC requirements; principally in the areas of the management of construction activities by their contractor(s), adherence to written procedures and the implementation of quality documentation programs. The findings were similar in many instances to previous findings of NRC's inspections at the WNP-2 project, which led, on June 17, 1980, to the imposition of civil penalties and the requirement that WPPSS submit information to NRC on the steps they would take to provide assurance of the quality of structures, components and systems constructed by their contractors. The documents provided to WPPSS are provided in Attachments 1 and 2.

QUESTION 2: How were these potential problems subsequently handled? Has any discussion of these problems appeared in official, public NRC documents? Please indicate how each potential problem in the draft documents has been resolved.

RESPONSE:

The nature and safety significance of the potential problems were such that they confirmed the need for the harsh enforcement action taken by NRC on June 17, 1980. As discussed in our letter to you of July 13, 1983, this action by the NRC resulted in the suspension by WPPSS of essentially all construction activities at the WNP-2 site for several months. The WPPSS, in response to these enforcement actions, initiated comprehensive programs to upgrade the construction and quality assurance programs of site contractors to allow, after Region V review of the upgraded programs, the restart of construction activities. The WPPSS also initiated a Quality Verification Program to verify the quality of construction completed prior to June 1980.

The findings of our investigation in June-July 1980 also served as the basis of a Notice of Violation issued to WPPSS by the Director of NRC's Region V office on August 15, 1980, a copy of which, along with our Investigation Report, is Attachment 3.

In accordance with NRC policy, these documents were placed in NRC's Public Document Room. As mentioned previously, many of the concerns developed during the course of this investigation were similar to previous NRC inspection findings which led to the enforcement actions described in June 1980. Recognizing the commitment by WPPSS to undertake a major Quality Verification Program to verify the quality of all safety-related construction completed prior to June 1980, a decision was made by Region V to defer, in the interest of efficient utilization of inspection resources, the resolution of many of the specific problems and concerns to the Quality Verification Program.

Several of the problems or potential problems were identified to WPPSS management by the Region V Section Chief as matters WPPSS should specifically pursue to resolution, apart from their response to those items cited in the Notice of Violation issued on August 15, 1980. These items are indicated by circled items (totaling 40) on the typed listing of concerns which is Attachment 4. Our Region V office is continuing to follow these items to resolution.

QUESTION 3:

Have OIA staff or other NRC personnel ever recommended or undertaken any investigation of the possible impropriety of the inspectors' conduct in releasing draft documents to WPPSS 2 personnel? If so, what were the results of the investigation? If not, why not?

RESPONSE:

Neither the OIA staff nor other NRC personnel recommended or conducted any investigation into the possible impropriety of the Region V Section Chief's conduct in releasing the longhand written document described above to WNP-2 personnel. This is because, at the time of this incident, the current procedures for distinguishing between investigations and inspections were not in effect. Thus we do not feel that a separate investigation into the 1980 incident would be justified.

REQUEST:

Please also provide a list of all documents, including internal staff reports and memoranda, on quality assurance, quality control, design deficiencies or management problems at WPPSS 2 which were written by, sent to or routed through NRC since 1980. This list need not include documents contained in the public records of NRC proceedings.

RESPONSE:

We are uncertain as to the specific types of documents for which you desire a listing. There are basically three categories of documents of the type you describe. The first category includes correspondence between the NRC staff and WPPSS on technical matters relating to the license application and safety analysis report; reports from WPPSS relating to significant construction or design deficiencies; NRC staff safety evaluation reports; NRC inspection/investigation reports and related enforcement correspondence; NRC Bulletins, Circulars, Information Notices and Generic Letters; and NRC reports on the Systematic Assessment of Licensee Performance. Final reports and correspondence relating to the WPPSS Design Reverification and Quality Verification Programs also are included in this category. Although there is no NRC public hearing on the operating license for WNP-2, documents in this category are routinely placed in NRC's Public Document Room.

A second category of documents includes the detailed design, construction, quality assurance and quality control procedures, records and reports which NRC inspectors examine in the process of inspections and investigations. Detailed reports relating to the individual contractors and vendors covered by the Quality Verification Program are included in this category. Large numbers of reports and other documents in this category are routinely provided by WPPSS to the NRC Resident Inspectors at the WNP-2 site. Generally, documents in this category are provided to and retained by NRC inspectors for a period of time to facilitate our inspection or investigation activities, and returned to WPPSS or destroyed after they have served this purpose. These documents are not placed in NRC's Public Document Room.

A third category of documents includes internal NRC memoranda containing recommendations, requests or information between or within program or staff offices. Recommended enforcement and related correspondence between NRC regional and headquarters offices would be included in this category as well as requests for technical assistance.

A listing of documents in the latter category is included as attachment 5. This listing was compiled essentially from the Region V WNP-2 correspondence log with limited input from other NRC program offices.

A compilation of all documents in the first category would involve substantial staff effort, and it would be virtually impossible to compile a listing of all documents in the second category. We would be pleased to work with your staff in an effort to identify specific types of documents from these categories which you desire.

Description of the Circumstances Surrounding
Release of the Draft Investigation Results to WPPSS

During the period June 1 - 25, 1980, an investigation was conducted by NRC's Region V office into allegations regarding construction activities at the WNP-2 site. During the course of the investigation, interviews were conducted under oath with 34 project personnel from whom specific allegations/concerns were obtained. Brief notations of these allegations/concerns were summarized in the form of a handwritten document by the Region V Section Chief in charge of the investigation. This document served to formulate his daily action plan. Notations were also made on this document reflecting the thoughts of the Section Chief as to how he or his investigation team might pursue certain allegations or concerns. A copy of this document is Attachment 1. On June 20, 1980, with the approval of the regional management, a copy of this document was provided to WNP-2 management by the Region V Section Chief. The longhand written document was subsequently typed by WNP-2 personnel. A copy of the typed document is Attachment 2. At the time the handwritten copy was provided to the WNP-2 management, the onsite investigation work was essentially complete. The purpose of providing the document to the WNP-2 management was to facilitate communication of the safety concerns to the WPPSS management for their prompt attention to them pending subsequent issuance of NRC's report on the investigation. The report was issued on August 5, 1980. According to Region V, no opportunity was afforded the WNP-2 management to change, correct, modify or otherwise influence the content of these documents. The concerns included in these documents were similar in many instances to those which had led to recent major enforcement actions by the NRC. (See response to Question 2.)

Until recently the distinction between the procedures for inspections and those for investigations had not been clarified and the handling of this investigation was influenced by this fact. The NRC has since moved to clarify these issues for staff and codify our investigative procedures. In addition, a new policy regarding distribution of draft inspection reports has been issued to the staff. Under this new policy, Region V's preliminary investigative results would not have been shared with the licensee unless it was necessary to obtain prompt licensee evaluation and corrective action as appropriate related to safety or security concerns.

ATTACHMENTS

1. Hand written document - Summary of Concerns
dated 6/3/80
2. Typed document of Attachment 1
3. Letter to WPPSS from R. H.Engelken, dated 8/15/80
w/enclosed Notice of Violation & Investigation Report
4. Potential problems or problems identified to WPPSS management
by Region V Section Chief
5. Listing of Internal Memoranda/Documents

6/3/EC

1 of 5

Summary of Concerns

(A)

1. Loss of material traceability

- a #1 - IR cancelled - which reveals loss of trace.
- b #208 - memo - (reviewed by NRC staff)
- c #211

2. Material not controlled 2" Schedule 80

- a pipe in quarantined area with no reason why it's there. used to be 5600' of pipe in this area, now 2400' of pipe. ∴ 5600' of pipe was installed.
- b. ^{HT} 13152 pipe in quara. area with no exc. as to why it's there - disc #1

3. Construction Controls QA -

Project mgr. brow beats the CA mgr.

4. Cleanliness

- a pipe in lay down area for 4 years - rusted without cleaning.
- b 12 ft ladder in vertical run of 36" main steam line in containment (In QCII pipe in TG Bldg.)
- c 1/2 sq. ft fish is planned before it goes - there is all kinds of garbage in lines.
- d. #206 name plate dropped in clean line

5. Laminations (cracks) in pipes - not followed up properly - S.W. and ignored piping, support, GA says wouldn't allow proper failure. Dec. #100 ex if problem - see lamination - gives accept. criteria as ASME VIII 100 III.

6. S.W. Underground Piping - Traveller shows that engineer walked down the system - couldn't have done this since its underground

7. Improper hydro - have to keep pumps on because pump fittings leak so much

8. Documents (NF-6's, NF 69) have information changed without explanation or initials/dates...
103, 205, 104, 203 ... - many more!

9. Inconsistent dating of date rec'd / ring issued and date weld performed - I.e. issued in many cases
101, 102, 104 → 126, 205, 207 ..

10. No welder Id. on NF-6
205, 207

11. Records falsified - (no specifics) compared copied records with originals now in Vault.
12. More rod turned in than issued / only are 16 of rod used.
#109, #103.
13. No records for each day welding was done.
#110 - other.
14. Inspector's stamp issued 6/78 next to item dated 5/6/78.
#112
15. QA Manager did away w/ eye exams for 8/79 until 3 weeks ago - now hires haven't had eye exam, GAE doing weld inspection haven't had eye exam...
16. Heat no. HA0001 used when traceability is lost
its a fake number (no specifics where used)
17. Piping bought from unapproved vendors in 1978
(no specifics)
18. Welder J. Hull welded 8-18" welds in the same week - then from started in industry...

19. 3/4" pipe of certain ht # was ben. # ht # changed
this was then cut out and replaced with
new pipe with no heat no and no QC witness
#121

20. WBG Field Superintendent will do wrong until
caught (J. Wilkerson) in spec. hrs;

21. IRs are not properly handled - some are not
issued and no one follows up on problem
#127, 207, 204, 209; #1, started audit control of IRs

22. Class I fitting not traceable - not properly followed
up #123 (fwd. claim.)

23. Arc Strikes on piping a problem
(no spec. hrs.)

24. Vendor piping improperly modified
APPL form used to doc changes to h-stamp piping
(no spec. hrs.)

25. 20 Package Completion Lists have disappeared
from packages (no spec. hrs.)

26. No compaction reports on buried SW piping
(in specific manner)
27. In 1978 WBG took packages out of the vault
so the NRC would n't see them.
28. In March 1980 WBG removed material from
lay down area so the State Reps wouldn't
see something.
29. Pipe welded up in field with plastic cap
left on at joint
(no specifics)
30. Major problems with missing/incomplete documentation
packages - in matrix
31. Overly complex procedures with numerous changes
WR-140 no 1,2 ; CEP-25, #210, also HTR
"Traceability Piping Document Review"
32. WBG procedures don't reflect specification requirements
in the area of removing attachments
#210 (memo of 5/3/80).

33. Inspector training is inadequate - only read (or have read to them) the procedures, don't feel this is enough.
34. No AI sign off of final records (NF-6A form)
222
35. AI initials are different (maybe forged)
initial "G" on #213. others.
36. LPCS-63 hanger package lost - don't know how resolved.
37. Local 598 has a listing of problems of WHP-2. which need follow-up.
38. Overtorquing - Torque wrenches should be 2 ft. lb. 2-1 on site. All torquing done with 4 ft. lb. or 10 ft. lb. torque wrench.
39. Contract 215 Class 2, ASME III material (pipe and steel) has not been received with Charpy Test as required by the contract specifications.
40. Fischer-Porter flowmeters (rotameters) in ASME systems have been designed by a company that does not have an N-stamp (Fischer-Porter) contrary to ASME III requirements (Document # 305).

41. Serious minimum pipe wall problems exist:
- a. counterbores made too deeply (See memo # 304)
 - b. Burns & Roe didn't specify enough wall. The AI ran one calc. showing that MS pipe did not have enough wall. B/R reduced corrosion allowance from $\frac{1}{8}$ " to .090" for these specific pipes only. (See PED 215-M1747), B/R allows additional 12 1/2% reduction in wall for surface blemishes. B/R has not checked other pipes for similar problem. (See document # 303).

42. WBG buying piping to ASME 1917 Edition w/o certifying that it meets requirements of 1971 Edition W73 Add. as required in Section 15G "Pipe Supports" for contract 215.

43. Equip Pads & Concrete Floor ~ Records are insufficient to determine whether or not rebar is there. Curing records not consistently kept and those kept may be unsatisfactory. (Documents # 400, 401, 402).

44. RFI procedure used on site is not the one called for in spec. RFI form is different.

45. Contract spec. required TSP in piping system, but

a letter from Burns & Roe to WBG deletes require...

Found double numbers in hangers. Used
wrong numbers. Examined 15 hangers no double #s

7. End prep to prep - Clean with emery
cloth only - don't proceed to bright metal.
Worked about min well.

8. Clean to prep. Used ~~only~~ several articles.
Only one article of wood (i.e. fireproof)

9. Check materials at 548' elevation.

10 angle iron on pallet in Class 1
storage w/o heat nos.

(C)

① E.L. Houghton / Pete Houghton / Roy Clave - Taped session on inspection of issues - what's wrong in the project.

② List of ~~discrepancies~~ items in contract spec not included in proc. requirements / procedure.
 Mgmt Interim → Matrix check with PSAR / FAP commitment.

③ Proc. activities on hangers - Price okay - Contingency to spec

④ Anchor plates - welding split anchor housing - do some welding.

⑤ PWS 102 reference on document where traceability is in question on hangers.

⑥ Minimum weld on socket welds may have been taken. Sampled; found ~ 15% below min. weld. Cut out and replaced. Did no impact additional sampling.

~~X~~ Lot of junk left in pipe. Files of Log & Morris, Kenneth, etc indicate RT rejection of welds because of junk in area of interest. 16 shots

⑦ Drain in plant plugged with debris -
 Q on flush out tests?

⑧ Care of valves during welding, weld repair & repair in context to plant repair & maintenance

(10) Valve may not be immediately closed (11)
for isolation during.

(11) Main stem may be below minimum wall.

(12) Stop on main stem stop. (West side) located
such that valve may overdrive, run against
ceiling/floor & cause damage to system.

(13) Circumstances related to Start-Common
with check and certification of
it, its design and notes.

✓ (14) Been installing condition paper to
tolerance of $\pm 6"$ on line which
spec is $\pm 2-0$ on line. (units $\pm 6-0$).
(Richter-Dwyer is problem.)

(15) Q&A audit procedure - limited scope
operation - no records.

✓ (16) Q&A Manual requires Q&A Mgrs to examine
12-14 in the indication monitoring per
AS 211-2000. 10 steps (not done)

(17) 211, RHR 897-2024, 7413, units
315, 415, 515. 12-14 in the indication monitoring per
AS 211-2000. 10 steps (not done)
OK audit to be completed. Still checking out.
1955 may be checking.

(18) Question on availability of procedures for QC trip. Copies all removed from field except for one copy.
(Not quite true - send others outside RB in trailers.)

(19) As-built done from desk rather than walk down.

(20) Main an intake into control room. Flanges may not be properly insulated. Restricting velocity should be 1 ft/sec - Wind etc.

(21) Order of review of documentation is unimportant. Engineering was supposed to do document review prior to as-builts. Instead, Asa review after final QC sign off of as-built review is done. (May make changes QC unaware of.)

(22) Engineering may keep date documentation rather than follow SOP of entering review date and initials. "Can go to most any documentation package and find a date."

(23) Stores records not given to owner for review

(24) LPCS \neq HPCS. NCR on pitting and indentations below minimum wall. This should have been identified by associated pipe. WPPSS has issued a NCR on pipe in LPCS but may not have done so on HPCS. IR prepared by inspector.

(25) How are IRs voided. Feedback back to inspector. Is justification provided to close the loop on outstanding IRs. ~~outstanding IRs~~

(26) welding department has many references to unconsolidated inspection

(27) Contract requires RT of 16% of welds on bellows work for each size of pipe and position welded. Many lost to fulfilling this requirement substantially, with RTs for QC of the "good" welds.

① Sample CV. Cut out and replace constant quantity of pipe with wrong heat number due to a heat number mix up. Mostly 3/4" small bore pipe.

② Use surplus pieces of material from another hanger. Transfer heat numbers. Constant retrofit on hangers.

③ Changes to procedures are production oriented rather than QC oriented.

④ Annual eye examinations were not given on schedule. Cancelled by order of S/Ly from February till April/May. ~~Cancelled~~ Exam done in February - done in April or May 1)

⑤ Do not address arc strikes on hangers if not on weld.

⑥ For one instance of wrong heat number on pipe hanger.

~~XXXXXXXXXXXX~~

① QAP/QCIs are prepared by Ed Houghton
(construction rate: than QA/QC)

② Training needs improvement. Captains
need training (several complaints in
this area.)



Recommendations

- ① Get information on MWR 975-4.6 @ class 501 - 4" SS AP's E and L. Should be reported as 50.55 (e) item 112 on SWeld ~~Welding~~ (e) Not 21
- ② acceptance of Power Pipe; hangers to commercial weld standards. (Examine several hangers to verify quality of welding.)
- ③ Reason for EQR reduction from 100% to 20% sample of completed hangers considering the high rejection rate is ~80-90%.
- ④ ASME QAM; QCP's; WPs; Project Director Contract Specification
- ⑤ WFP's. Audit of hangers are pKgs ~ 1 month ago
- ⑥ Only contracts not changed to reflect changed welds.
- ⑦ Utilization of repetitive inspection.

① QCP-24 revised to remove requirement for
larger inspections to check for critical
characteristics such as air intake,
transmissibility, directed policy, oversized welding,
critical welds, etc.

② Overage article or exam where four or
six parts are considered of two
different acceptable.

(11/1)

③ FQA/patches added removed from final
documentation packages.

④ FQA (11/1) are not for non set of
procedures to be significant transfer
to new procedure.

⑤ FQA (11/1) are not for functioning
in accordance with FQA (11/1) (11/1 copy
of 400's & 11/1)

(6) Originally E&K did 100% inspection of
Kargen's (enlist). Had rejection rate of
~ 90%. Inspection requirements reduced
to 20% random sample. Rejection rate
still about 90-95%. Rejections are
~ 50% documentation - 50% material
deficiencies.

(7) Records of record not being identified
on detail assignments.

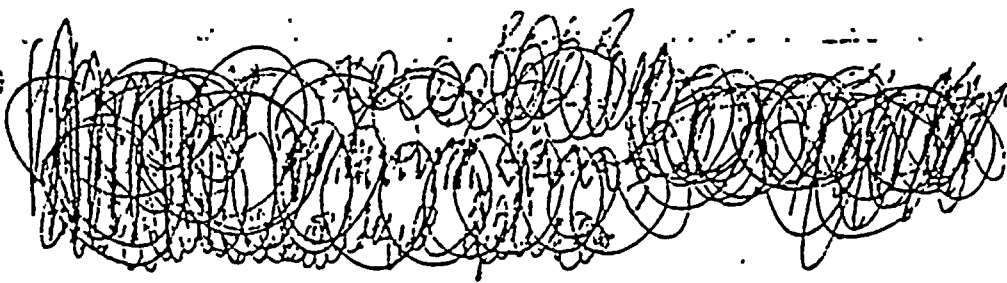
(8) 10,000 units of paper documentation - all items
were missing from packages. (Store
requisitions, etc.)

(9) Store requisition missing in E&K review
and by inspection - question validity of
store requisitions. (Store copies sent
to check in field, while given in documentation
packages. Can't prove anything wrong - suspicion

(10) Intention to accept large as long as one of
the numbers in store req. on bill of material good.
(It's none on the bill of material.)



11



(12) Particulars are not changed to reflect oversized ~~welds~~ welds, only undersized welds. These are designated as acceptable by C/B/E engineering. (Provided they be referred back to the designer for disposition in B/R engineering.)

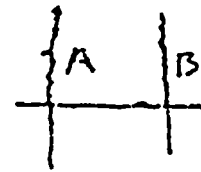
(13) Structural steel inside C/V containers has no pockets, undersized welds, lack of fusion, undercut, slag, porosity, and striations, etc. Also, excessive grinding in base metals.

(14) MT test of welds of structural steel done cold with pockets in base and slag pockets present in MT welds are cracked.

(15) ~~Welding~~ ^{Welding} is a single weld rather than 2 welds.

(16) Root zone inspections are missed but are being brought off in final documentation packages for structural steel.

(17) ~~2nd~~ lot of inspection of circumferential welds was recorded for wrong weld sequence: i.e. look from inside out rather than outside in. on weld map.



(18) Forced to accept as being receiving inspection 2-4" flange discs supplied by Peter Kinnair (not on approved vendors list. Should have been owner accepted material not WBC ^{Design} class I, air intake structure design for turbine building. Discs installed 4/7/80.

(19) Paragraph 145 requires corrosion steel to be painted yellow when placed in storage i.e. not when removed.

(20) People should be compensated for material obsolescence, miles, hours etc - waste of money.

Info for
WPPSS

(21) Apprentice QC inspectors are logging forgers without a journeyman being present.

(22) Classroom training is minimal and that given, instructors are not responsive to questions. - accept what you told without questions

(23) Do not return riveted IRs to originator. This is required by the procedure.

(24) QCP-29 acceptance criteria is different from specification, i.e. allows application of 90 ft-lb torque for 1/2-inch Hilts. Quench Bolts rather than 50 ft-lb.

Action Items

① IRs need copies of examples of IRs that were voided w/o being entered into the system - w: given a number w/ Mike Brickle

② Copies of memos from engineer/QA that may override the procedure.

FT ③ Flashlight on Reactor pressure vessel during GE train,

~~_____~~

FT ⑤ WNP 114 - relief may be in backward.

AT ~~the~~ MWR 975-4.6 @ elev 501 - Modified
4" SS AP¹/₂E² spool, IR on 5 welds
showed lack of penetration. (Schedule
pipe from vendor shop) No action
taken on ~~the~~ rest of spools supplied
by AP¹/₂E. (Possible genuine prob.).

Q-2 system FSK II III (b) III - N/SR
discontinuation collection like engineer
does not want to pursue - other problem.

AT... (3) Pipe inside CL, RCL 695 at 606' at
attached to space frame. Long run of
pipe could be below minimum width
by LT. May have 12 in disposition

2-2.
AT ~~Q~~ Had some BCG like TCs (SS) on main
atom line where purge gas was
not established. Possibility of oxygen.

11/10 - 18 SS to SS local 304
 SS to SS local 304
 SS to SS local 304 (Fluor)

⑤ Memo to welding engineers (PS 6 # 289)
ref P3, P4 & P5 materials allow
lunch break or shift change as long
as preheat maintained. (Note: no welding
done since QC found out and disagreed
with practice.) ? does this constitute change in
practice?

⑥ Engineer says if pipe has heat number
on storage racks and on isometrics
(spare piece), number doesn't need
to be on pipe. "Pup" piece. ASME code.

⑦ RTR-667-8.12 HT L-24897 not stamped
between welds SA-5C. Parted on CS
pipe. Wrote up on PCL as needing
to be scribed on pipe. (Verified by
Kinsch. Await dispositioning of PCL first.)

⑧ R20001 in main steam line in TG.
From level indication; changed out 3 but
left in one. (Verified by Hammerly that
this was a configuration change and
condition is satisfactory.)

⑨ connection took valve apart without QC
authorization - removed/possibly from
Discovered. Had to put on valve
since it was mostly inside. (Still open.)

P.H.
C. Office

- (13) Weld washers on anchor support plates when bolts are in place.
? effect on anchor sheets.
(one case where anchor pulled out from wall)

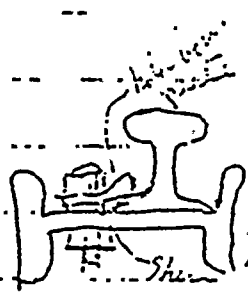
P.H. (14) Blanket NCRs on discontinuing of anchor bolt problems.

over (15) Procedures not readily available for review - folks jib up. Every body feels the pressure.



21

① Scappling and Taper Block wedge between
a new and structure where large door
pipes come out of structure. (B shield
weld cuts at 5.9-7 ft elev.



② Taper of water came main structure
over top. Then on a 1200 bolt of
which 2/3 were torqued before it further
was allowed to be. E.C. to sample a
valve to be removed to the air
to be over top. Resulting may be
to replace the E.C. with rather than
oil. Some under ^{medium} pressure
appear to be tight against side. May be
stopped with fast stick to achieve this.

③ Wires of structure at (proper) fuel
distribution

④ at 5.25 ft elev. = Structural steel repair
Can not determine from well as wire
when work was done. (No present or
missing bolts). The code lack of ability
to type and size of repair and for two cables
to follow structure as well as

⑦ No formal on-site testing of QC inspection
CVT with first line QC inspection ~ 5-6 weeks

2/6/80
 (2) Disposition of IRS + 450p - Dental Unit
 No. on same piece of paper. Orig N-144-23
 attached in page 9 potential over. Ht No J81636
 Scratched thru present. (I explained to 2" and 8"
 not 2" and 8") ✓ control of sensitive data.
 Special authorization etc.

② 18-180, 2/12/80. No mention made in
 report. Disposition is correct because
 transferable to Ht no. 21413 established.
 These upland forest stones are:
 "Some Ht no. 21413 on the way"

(5) Investigation of 2" x 8" pipe in section
#1 N: 124776 & 12477 on 8/16-18/84
disclosed entire section with irregular
circumference. The entire length of pipe
~~was~~ = 33' around the pipe in
in special motion (battered inspection
and data following irregular circumference
by using - questionable can not be
with dependent to accurate investigation
and cannot get true circumferential
and circumference.

Handwritten signature

⑥ IR 4217 identifies prob with NIX NDE
Question concerning of IR (4217) 4/11/14

(5) LCR - 4258/12 - 9287 - NCI Confidential
by FED - 2018 - NCI provided prior to
LCR being digitized.

فرمانیہ فریڈرک (جی)

(c) Reasoning: \vec{r} lies in plane. For king
character \vec{r} by SC in all cases.

⑥ Failure to receive timely response from B/R on RFIs.

1. 375 ft; 6 x 6 x 1 1/2" tubular steel
one piece, complete during installation
2. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
3. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
4. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
5. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
6. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
7. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
8. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
9. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.
10. 12 ft. x 12 ft. x 12 ft. x 12 ft. x 12 ft.

(12) By procedure, field engineer is allocated to change design by not his drawings. Since revision codes in design change. Cases where field work could not be done, field engineer was often interviewing with

(13) ~~By procedure~~ revision of field engineer revision codes. (K: responsibility to B/E program) Can not have drawings. ... as little as design codes.

(14) Hanger design from B/E that relate design criteria / specifications. Many are not installable because B/E engineer does not look at total building layout - i.e. other lines / cable trays, etc. Field Engineer then responsible for layout 'to the best of his ability' - says many write RFI - on basis of 6 months. may get answer. Therefore if you want to get the job done you make like the drawing if you can deliver as a "minor" design change. (1977-1978, as new position given)

(15) RIF-2700-RUR-E. Hanger already installed as per B/E. B/E gave transfer change. Design table duplication contains a revision ... B/E response to field ...



~~16~~ 16450-2HR-12 (RFI) 21d Engineer noted
pipe has been released to her by B/R in
12/10/79 has insufficient reinforcing
steel in west wall. B/R response
on 1/21/80 stated larger should
be redesigned. (? by who and
when.)

⑥ B/R design criteria may not address
pipe design stress. Example provided
in RFI dated 5/23/80 by KJC
where stress was 165, 165 psi and
allowable was 37,500 psi.
Could be a potential problem.

⑦ W/F 117 was revised by B/R WBG in
January 1980 - Still has not received
response or approval of our continuing
to work to an anticipated procedure.

⑧ Design FDR 385 or 358 was anticipated OK
and has additional design notes.
In design is also in the field.
In the report there are three
pages on the concrete design to
the steel in the concrete.

⑨ Design for concrete B/R design
the design for concrete design is not
satisfactory for the design to B/R.

(21) There is a lack of design control

(22) EQA may not be looking for
backups calculations.

(23) The qualification of field engineers
"not doing" performing "red line
engineering" (minor design changes)
should be questioned.

AE has given contractors ability to
make design changes per PD-7's PG.3.1
without design review/control
Hazen LPCS-11 accepted by first line
QC & engineering. Can make field changes
but has not had to justify as long as
change meets procedure. Should require
written tech justify and/or codes.

(24) Problems ID by EQA are not being
handled/documented as nonconformances.
Being handled as just another item.

(25) QCP-2.4 - max diameter can not exceed
1 1/2" limit diameter. CCAD 201 required
extra work when that diameter
exceeded 1 1/2" because QC had
restrictions in NF 237 are not
applicable. Spec is being misinterpreted
by S.C.

This could be a generic problem. HPCS-23
in a similar situation.
Spec for 1 1/2" LPCS-23, 100% 100%
inspection for all diameters.



RECEIVED

(26)

A/E's design organization and criteria need to be examined.

FBI OCT 14 PM 1:31

(27)

Out-of-plane stress on hanger is very weak - can conceivably overstress walls. (i.e. FPC-120, FDR-384, RCC-115, CAS-517 (B/R supplied for following RFI))

CAS 517 (A/E may say it's OK based on immediate calc.)

Design Guide M402 - may not contain criteria for out-of-plane stress.

(28)

NRC Bulletin 79-02. No clear criteria in M402 for stiffening arch plates nor is distribution being protected. Also in this requirement of Bulletin being satisfied.

(29)

Question for off-center hanger have been in letter. CONB 112 suggests FR with offset hangers. Off-center hangers are not covered in the design guide.

(30)

Have not seen any variability of design on 3/12 but don't know what present design is.

SUMMARY OF CONCERNS

1. Loss of Material Traceability
 - a. # 1 - IR cancelled - which reveals loss of trace.
 - b. # 208 - memo - (received by NRC - OK)
 - c. # 211
2. Material Not Cancelled
 - a. Pipe in quarantined (2" Schedule 80) area with no reason why its there used to be 8000' of pipe in this area, now 2400' of pipe, therefore 5600' of pipe was installed.
 - b. #U13152 pipe in guard area with no doc. as to why its there - disc. # 1.
3. Construction Controls QA
Project manager, brow beats the QA manager
4. Cleanliness
 - a. Pipe in laydown area for 4 years - installed without cleaning.
 - b. 12 ft. ladder in vertical run of 36" main steam line in containment (in QC II pipe in TG Bldg.)
 - c. No system flush is planned before hydro - there is all kinds of garbage in lines.
 - d. # 206 - nameplate trapped in drain line.
5. Laminations (cracks) in Pipes - Not Followed Up Properly - COMPLETED
S.W. underground piping, wrapped, QA mgr. wouldn't allow proper follow-up. Doc. # 100 ex of problem - slow laminations - gives accept. criteria as ASME VIII vice III.
6. S.W. Underground Piping - Traveller shows that engineer walked down the system - couldn't have done this since its underground.
7. Improper Hydro - Have to keep pumps on because pump fittings leak so much.
8. Documents (NF-6, NF-69) - Have information changed without explanation or initials/dates. # 103, 205, 104, 203,, (many more)
9. Inconsistent Dating of Date Rod/Ring Issued and Date Weld Performed - IRs issued in many cases # 101, 102, 104 - 126, 205, 207,
10. No Welder I.D. on NF-6 - # 205, 207
11. Records Falsified (6000+ records we xeroxed) - Compared copied records with originals now in vault.
12. More Rod Turned in Than Issued/only are 16 of rod used. #109, # 103
13. No Records for Each Day Welding Was Done - #110 + others
14. Inspectors Stamp Issued 6/78 Next To Item Dated 5/6/76 - # 112
15. QA Manager Did Away w/Eye Exams for 8/79 Until 3 Weeks Ago - New hires haven't had eye exam, AQE doing weld inspection haven't had eye exams.
16. Heat No. HA0001 Used When Traceability is Lost- Its a fake number (no specifics where used).

17. Piping Bought From Unapproved Vendors in 1978 - (No specifics)
18. Welder J. Hull Welded 8-18" Welds in the Same Week - This type item should be investigated.
19. 3/4" Pipe of Certain Ht. # Was Bent & Ht. # Changed - This Was Then Cut Out and Replaced With New Pipe with No Heat No. and no QC Witness - # 129
20. WBG Field Superintendent Will Do Wrong Until Caught (J. Wilkerson) - (no specifics)
21. IRs Are Not Properly Handled - Some Are Not Issued and No One Follows Up On Problem - # 127, 201, 204, 209, # 1 should audit contents of IRs
22. Class I Fitting Not Traceable - Not Properly Followed Up - # 128 (floor drain)
23. Arc Strikes On Piping a Problem - (no specifics)
24. Vendor Piping Improperly Modified - NPPI Form used to doc. changes to N-stamp piping (no specifics)
25. 20 Package Completion Lists Have Disappeared From Packages - (no specifics) On Hangers
26. No Compaction Reports on Buried SW Piping - (no specific number)
27. In 1978 WBG Took Packages Out of the vault So the NRC Wouldn't See Them.
28. In March 1980 WBG Removed Material From Lay Down Area So the State Reps Wouldn't See Something.
29. Pipe Welded Up in Field With Plastic Cap Left on at Joint. (no specifics)
30. Major Problems with Missing/Incomplete Documentation Packages - See matrix
31. Overly Complex Procedures with Numerous Changes - WP-140 rev. 1,2;QCP-25, #210, doc. titled "Traceable Piping Document Routed"
32. WBG Procedures Don't Reflect Specification Requirements In The Area of Removing Attachments - # 200 (memo of 5/18/80)
33. Inspector Training is Inadequate - Only Read (or have read to them) the procedures, don't feel this is enough.
34. No AI Sign Off of Final Records (NF-6A Form) - # 202
35. AI Initials Are Different (maybe forged) - Initial "G" on # 213, others
36. LPCS-63 Hanger Package Lost - Don't know how resolved.
37. Local 598 Has a Listing of Problems of WNP-2 Which Needs Follow Up.
38. Overtorquing - Torque Wrenches Should be 2 Tol. No. 2-1 On Site. All torquing Done With 4 Tol or 10 Tol Torque Wrench.
39. Contract 215 Class 2, ASME III material (pipe and steel) has not been received with Charpy Test as required by the contract specifications.

40. Fischer-Porter flowmeters (rotometers) in ASME systems have been designed by a company that does not have an N-stamp (Fischer-Porter) contrary to ASME III Requirements (Document # 305)
41. Serious minimum pipe wall problems exist:
 - a. Counterbores made too deeply (See memo # 304)
 - b. Burns & Roe didn't specify enough wall. The AI ran one calc. showing that MS pipe did not have enough wall. B/R reduced corrosion allowance from 1/8" to .090 for these specific pipes only. (See PED 215-M1747), B/R allows additions 12 1/2% reduction in wall for surface blemishes. B/R has not checked other pipes for similar problem. (See document # 303)
42. WBG buying piping to ASME 1977 Edition w/o certifying that it meets requirements of 1971 Edition W73 Add. as required in Section 15Q "Pipe Supports" for Contract 215.
43. Equip. Pads & Concrete Floor - Records are insufficient to determine whether or not rebar is there. Curing records not consistently kept and those kept may be unsatisfactory. (Documents # 400, 401, 402).
44. RFI procedure used on site is not the one called for in spec. RFI form is different.
45. Contract spec. required TSP in piping system, but a letter from Burns & Roe to WBG deletes requirement.

Dodds

Laminations in structural steel in steam tunnel - Being handled. Pybus steel vendor insp. by Richard Laughton & Rorg³ insp.

Arc strikes away from weld on hangers not required to repair. OK on structural steel.

1. Desk broken into & records relating to material traceability were taken. No evidence of forceful entry.
- OK 2. Look into question of MIC on storage racks could provide mtrl. traceability. Not designed for traceability.
3. NPS hangers stamped with large Numbers Construction convenience steel used and stamped with heat nos. provided by NPS. Check 78-79 time period. Two letter id. General Foreman. *added*
4. Initial installation (i.e., prior to 1977) for about 1 year did not have procedures for installation of hangers. Requirements not in place.
- ~~5.~~ Construction convenience steel bulk ordered used on all proj? How controlled? or fence being torn down.
- ~~6.~~ Found double numbers on hangers. Used wrong numbers. *added* Examined 15 hangers no double #s.
7. End prep of pipe - Clean with emery cloth only - don't proceed to bright metal. Worried about min. wall.
8. Condensate pipe used several welders. Only one welder of record (ie. final passes)
9. Check materials at 548' elevation.

added ID angle iron on pallet in Class 1 storage w/o heat nos.

1. Ed Harrington/Pete Garcia/Roy Clause - Taped session on inspector i.d. issues - what's wrong on the project.
2. I.d. of items in contract spec. not included in proj. requirements/procedures. Mgmt. Interim - matrix check with PSAR/FSAR commitment.
3. Arc strikes on hangers - Proc. okays - contrary to spec.
4. Anchor plates - Welding split anchor housing - did some welding.
5. PWS 102 reference on document where traceability is in question on hangers.
6. Minimum wall on socket welds may have been taken. Sampled, found 15% below min. wall. Cut out and replaced. Did not inspect additional sampling.
7. Lot of junk left in pipe. Files of Lloyd Norris, Level III, NDE indicates LT rejection of welds because of junk in area of interest. 16 shots.
8. Drains in plant plugged with debris - Q on flush out tests?
9. Care of valves during welding, weld repairs. 2 repairs then cut out so doesn't require engineer approval.
10. Valves may not be environmentally qualified for reduction service.
11. Main steam may be below minimum wall.
12. Stop on Main Stm. Stop (west side) located such that valve may overdrive, ram against ceiling/flow and cause damage to system.
13. Circumstances related to Gilbert-Commonwealth check and certification of lo/hi drains and vents.
14. Be installing small bore pipe to tolerances of $\pm 6"$ on iso where spec. is $+2 -0$ on iso (could be $+6 -0$) (Richard Layton i.d. problem).
15. QA audit procedure - limited scope operation - no muscle.
16. QA Manual requires QA Manager to examine IRs for trend evaluation monthly per ASME Survey "N" Stamp (Not done)
17. Dwg. RHR 897 - 2027, FW 13, azimuth 315° , elevation 552'. Reactor vessel nozzle to feedwater saw drop ^{turn} through/Reshot OK should be rejected. Still checking out. WPPSS may be checking.
18. Question on availability of procedures for QA insp. Copies all removed from field except for one copy. (Not quite true - 2 others outside RB in trailers)
19. As-built done from desk rather than walk down.
20. Main air intake into control room. Flanges may not be properly insulated. Resistor reading should be 1 M₂ - was 1 ohm.
21. Order of review of documentation is in question. Engineering was supposed to do document review prior to as-builts. Instead, does review after final QC sign off of as-builts review is done (may make changes QC unaware of).


22. Engineering may back date documentation rather than follow SOP of entering review date and initial. "Can go to most any documentation package and find errors
23. Stores records not given to Owner for review.
24. LPCS & HPCS. NCR on pitting and indentations below minimum wall. This should have been identified by associated pipe. WPPSS has issued an NCR on pipe in LPCS but may not have done so on HPCS. IR prepared by inspector.
25. How are IRs voided? Feedback to inspector. Is justification provided to close the loop on outstanding IRs.
26. Welding department has many references to unconsumed inserts.
27. Contract requires RT of 10% of each new welders work for each size of pipe and position welded. May not be following this requirement religiously, rather RTs for QC of the "good" welders.



1. Inside CV. Cut out and replaced substantial quantity of pipe with wrong heat number due to a heat number mix up. Mostly 3/4" small bore pipe.
 2. Use surplus pieces of material from another hanger. Transfer heat numbers. Constant retrofit on hangers.
 3. Changes to procedures are production oriented rather than QC oriented.
 - 4.. Annual eye examinations were not given on schedule. Cancelled by order of Sly from February til April/May. (exams due in February - done in April or May)
 5. Do not address arc strikes on hangers if not on weld.
 6. Has one instance of wrong heat number on pipe hanger.
-
1. QAP/QCIs are prepared by Ed Harrington (Construction rather than QA/QC).
 2. Training needs improvement. Crafts need training (Several complaints in this area.).

Action Items

1. Get information on MWR 975-4.6 @ elev. 501 - 4" SS AP&E spool. Should be reported as 50.55(e) item IR on 5 weld. Not QI.
 2. Acceptance of Power Piping Hangers to commercial weld standards. (Examine several hangers to verify quality of welding.)
 3. Reason for EQZ reduction from 100% to 20% sample of completed hangers considering the high rejection rate, i.e.: approx. 80-90%.
 4. ASME QAM: QCPs; WPs; Project Directive Contract Specification.
 5. WPPSS audit of hanger doc. pkgs. approx. 1 month ago.
 6. Verify as-builts not charged to reflect oversized welds.
 7. Utilization of ^{apprentice}~~apprentice~~ ^{ors}~~inspections~~.
-
1. QCP-24 revised to remove requirement for hanger inspections to check for critical characteristics such as arc strikes, tracability, elongated holes, oversized welds, critical weld symbols, etc.
 2. Oversize welds or cases where four sides of plate were welded instead of two deemed acceptable.
 3. EQA (IVI) punch sheets removed from final documentation packages.
 4. EQA (IVI) does not have own set of procedures. Go to adjacent trailer to review procedures.
 5. ? EQA (IVI) may not be functioning in accordance with QAM. (Get a copy of WBG's QAM)
 6. Originally EQA did 100% inspection of hangers (audit). Had rejection rate of approx. 90%. Inspection requirements reduced to 20% random sample. Rejection rate still about 90-95%. Rejections are about 50% documentation - 50% material deficiencies.
 7. Records of rework not being identified on detail drawings.
 8. WPPSS audit of hanger documentation discovered items missing from packages (Store requisitions, etc.).
 9. Stores requisitions missing on EQA review suddenly appear - question validity of stores requisitions. (Green copies used to check in field, white goes in documentation packages. Can't prove anything wrong - suspicious.)
 10. Instructed to accept hangers as long as one of the numbers on store req. or bill of material good. (Sly's memo on tracability.)

11. (This item was completely illegible to type - scribbled through)
12. As-builts are not changed to reflect oversized welds, only undersized welds. These are dispositioned as acceptable by WBG engineering. (?Should they be referred back to the designers for dispositioning, i.e., B&R engineering.)
13. Structural steel inside CV contains beam pockets, undersized welds, lack of fusion, undercut, slag, porosity, arc strikes, etc. Also, excessive grinding in base metal.
14. MT tests of welds of structural steel done cold rather preheat because slag pockets pop out. Re MT will show cracks.
15. Documenting  . As a single weld rather than 2 welds.
16. Root pass inspections are missed but are being bought off in final documentation packages for structural steel.
17. Lot of inspection of sacrificial shield was recorded for wrong weld seams; i.e.; look from inside out rather than outside in on weld map.

A	B
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 B instead of A
18. Forced to accept as being receiving inspected 2/4" floor drains supplied by Peter Kiwit (not on approved vendors list. Should have been Owner-accepted material, not WBG. Designated Class I air intake structure drains for turbine building. Drains installed 4/7/80.
19. Procedure 145 requires convenience steel to be painted yellow when placed in storage, i.e., not when removed.
20. People should be responsible for material ordered such as valves, hangers, etc. - Waste of money.
21. ~~Apprentice~~ ^{Apprentice} QC inspectors are buying hangers without a journeyman being present.
22. Classroom training is minimal and that given, instructors are not responsive to questions - accept what your told without question.
23. Do not return voided IRs to originator. This is required by the procedure.
24. QCP-24 acceptance criteria is different from specifications, i.e., allows application of 90 ft-lbs torque for 1/2-inch Hilties Quick Bolts rather than 50 ft-lbs.

Info for
WPPSS

Action Items

1. IRs need copies/examples of IRs that were voided w/o being entered into the system - or given a number. w/Mike Brickle.
 2. Copies of memos from engineer/QA that may override the procedure:
 - AT 3. Flashlight in Reactor pressure vessel drain. GE listing.
 4. .
 - AT 5. WNP 1/4 - valves may be in backward.
- AT (MWR 975-4.6 @ elevation 501' - Modified 4" SS AP&E spool. IR on 5 welds showed lack of penetration. Schedule pipe from vendor shop] No action taken on rest of spools supplied by AP&E. (Possible generic prob.)
- Provide info to all relevant*
- Ø-2 System ASME III, Class III - NSR decontamination solution line. Engineer does not want to prove - other problems.
2. Case of pipe in CV where anytime made attachment had a problem with cracks or laminations - repaired, no action or looked at rest of pipe.
 3. Pipe inside CV, RC1C 695 at 606' elevation attaches to spare frame. Long run to pipe could be below minimum wall by UT. May have been dispositioned.
- 2-2
- AT Had some BCG line TC, (55) on main steam line where purge gas was not established. Possibility of sugaring.
- INC - 18, SS to SS weld 304.
Did not establish purge.
MS-58-1 thru 775 - 55-1 (FW-2)
5. Memo to welding engineers (PS6 #289) ref. P3, P4 & P5 materials allows lunch break or shift change as long as preheat maintained. (Note: No welding done since QC found out and disagreed with practice).? Does this constitute change in procedure?
 6. Engineer says if pipe has heat number on storage racks and on isometrics (spool piece), number doesn't need to be on pipe. "Pup" pieces. ASME code pipe.
 7. RHR-667-8.12 HtL-24897 not stomped between welds SA-5C. Painted on CS pipe. Wrote up on DCL as needing to be scribed on pipe. (Verified by Kirsch. Await dispositioning of PCL finding).
 8. AA0001 on main steam line in T.G. for level indications, changed out 3 but left in one. (Verified by Hernandez that this was a configuration change and condition is satisfactory).

9. Conservation took valve apart without QC authorization or removal/assembly from discovered. Hold tag put on valve since it was misty inside. (Still op.)

- VT 10. Rejecting all power piping hangers. At meeting included Monis, Webster, Walkins and Sly. QC constructed to accept welds to commercial weld standards. (i.e., trailer hitch).

Sandblasted and given to painting contractor who refused to paint because welds defective. Okay inside CV not outside. Practice has been in effect for 3 - 4 months. When get P.O. for Power Piping hangers, Mac Haye writes in commercial standards.

- PN 11. Of a 20% sample of hangers with documentation in valut, 80% were found to be unsatisfactory and needed to be returned to QC for correction. (WPPSS initiated program).

12. QC's book of heat numbers disappeared for 4 - 5 hours during a QC verification check of correct materials in the hanger. Fab. Shop.

- PN 13. Weld workers on anchor support plates when bolts are in place. ? effect on e office anchor shafts. (One case where anchor pulled out from wall).

- PN 14. Blanket NCRs on dispositioning of anchor bolt problems.

- OWNER 15. Procedures not readily available for review - holds job up. Energy body feels the pressure.

1. Scaffolding and tube block wedge between a line and structure where large bore piping comes out of sacrificial shield wall at 551-4' elevation.

2. Turbine Generator crane rail bolts were over torqued. There an 1200 bolts of which 2/3 were torqued before problem was discovered by QC for sample of 60 bolts demonstrated all to be over torqued. Resolution may be to replace the the 60 bolts rather than all bolts. Shims under hold down plates are suppose to be tight against rail. Many are stuffed with flat stock to achieve this.

3. At 524' elevation - Structural steel repair cannot determine from weld records when work was done. Hold plates are missing bolts). Records lack visibility to type and size of repare and/or traceability to filler metal or welder.

1. No ^{al}formed on-site testing of QC inspectors OVT with first line QC inspector 5 - 6 week.

2. Dispositioning of IRs 49504 (2/6/80) - double heat no. on same piece of pipe. Orig. N-144-13 etched in pipe & painted over. Ht No. J816356 scribed thru paint. (J applicable to 2" sch. 80 not 2" sch 4-0). ✓ control of scribe-tools. Special authorization etc.

3. IR 4980, 2/12/80, No. number scribed on pipe - dispositioned to accept because traceability to Ht. No. 11-4-6) established thru w/p and vertical stress req. "sice HT No. N14403 on this pipe".

13/
144

4. Investigation of 2" sch. 80 pipe in quarenteen heat no. 124776 and 12477 on 616 thru 18 of 1980 disclose entire section with longitudinal discontinuity the entire length of pipe #33 around the length of pipe inspired motion (visual inspection by QC - questionalbe areas _____ prior to installation).
5. NOT LEDGIBLE.
6. IR 4219 identifies problem with NIX NDE questions dispositioning of IR (dated 9/7 thru 9/14.
7. NCR-4898/IR-4287 - NCR Circumvented by PED-2018 - Work proceeded prior to NCR being dispositioned.
8. Qualify of Engineering.
9. Reaming of holes by crafts. Not being checked by QC in all cases.
10. Failure to recieve timely response from B/R on RFIs.
11. ____ 330 ft of 6 X 5 X 1½" tube steel mag. found cracks during installation of 181 _____ - 330 ft and 20 ft left in store. _____

12. By procedure, field engineer is allowed to change design by red line drawings. Specs require calcs in design change. Cases where welder couldn't make weld. Field engineer gives ok without forming calcs.
13. (Illegible - best guess on this one) No review of field engineers design calcs. (i.e., required by WBG program) Can red line drawings no one looks at design calcs.
14. Hanger designs from B&R that violate design criteria/specifications. Many are not installable because B&R engineering does not look at total building layout - i.e., other lines/cable trays, etc. Field Engineer then required to lay out to the best of his ability. Eng. may write FRI about 6 mos. later, may get answer. Therefore if you want to get the job done you red line the drawing if you can define as a "minor" design change (1977-1978 are real problem years).
15. RIF-2760-RNR-R Hanger already installed per Rev. 0. By Rev. 1 B&R changes hanger design. Design fails deflection criteria and requires welding 50% across width of existing steel toflange. B&R response to field.....(Illegible)
16. (Illegible - best guess) IE 400-RHR-12 (RFI) Field engineer stated pipe anchor release as revised by B&R on 12/10/79 has insufficient reinforcing still in west wall. B&R response on 1/21/80 stated hanger should be re-designed. (?By who and when).
17. B&R design guides may not address pipe bearing stress. Example provided in RFI generated 5/23/80 by KDC where actual was 165,000 psi and allowable was 37,500 psi. Could be a prevalent problem.
18. WP117 was revised by WBG in January 1980 - Still have not received response or approval - are continuing to work to an outmoded procedure.
19. Hanger FDR 385 or 358 was underdesigned and had additional bearing plate installed in place in the field. What effect does welding have on the concrete adjacent to the weld and(Illegible)
20. Illegible
21. There is a lack of design control.
22. EQA may not be looking for backup calculations.
23. The qualification of field engineers performing "red line engineering" (minor design changes) should be questioned. AE has given contractors ability to make design changes per PD-75 RG-3.1 without design review/control. Hanger LPCS-11 accepted by first line QC & Engineering. Can make field changes but does not have to justify as long as change meets procedure. Should require written tech. justification and/or calcs.

24. Problems ID by EQA are not being handled/dispositioned as nonconformances. Being handled as just another item.
25. QCP-2K - Max diameter cannot exceed $>1/8$ " bolt diameter. COND 701 required extensive rework when field engineer requested check because QC had listed this item in NF 237 as not applicable. Spec is being misinterpreted by QC.

This could be a generic problem. HPCS-23 is example of "gross" case. Other EDR-133, LPCS-3 (.....40-50 weeks). Cont. are reaming holes.
26. AEs design organization and criteria needs to be examined.
27. Out-of-plane stress on hangers is very weak - can conceivable over-stress welds. (i.e., FPC-120, FDR-384, RCC-115, CAS-517 CB/R supplied fix following RFI).

CAS 514 (A/E may say its ok based on immediate calc)

Design Guide M400 - may not contain criteria for out-of-plane stress.
28. NRC Bulletin 79-02. No clear criteria in M400 for stiffening anchor plates nor is direction being provided. How is this requirement of Bulletin being satisfied.
29. Criteria for off-center hanger base plates is lacking. COND 442 question B&R on this subjectB&R did not consider this to be a critical dimension.
30. Have not seen any visibility of Owner or B&R in plant. Not ever present during installation.

