

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF INSPECTION AND ENFORCEMENT
Richard C. DeYoung, Director

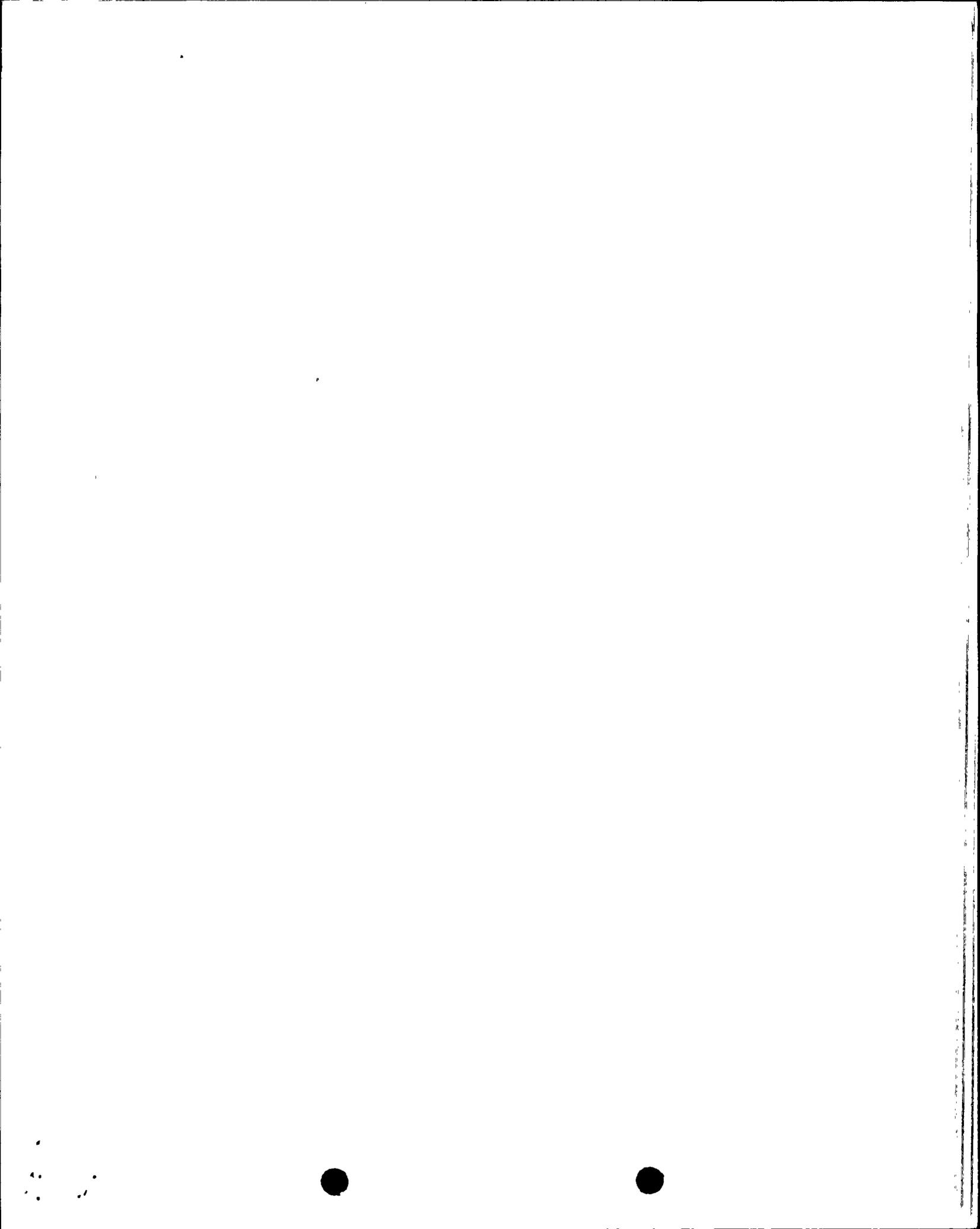
In the Matter of)	
)	
WASHINGTON PUBLIC POWER SUPPLY)	
SYSTEM)	Docket No. 50-397
(WPPSS Nuclear Project No. 2))	(10 CFR 2.206)

DIRECTOR'S DECISION UNDER 10 CFR 2.206

INTRODUCTION

On October 14, 1983, the Coalition for Safe Power (Petitioner) filed its "Show Cause Petition From the Coalition for Safe Power Requesting Revocation of the Construction Permit and Denial of an Operating License for Washington Public Power Supply System Nuclear Project No. 2" (Petition). The Petition requested that the Nuclear Regulatory Commission institute show cause proceedings pursuant to 10 CFR 2.202(a) to determine whether the construction permit for the Washington Public Power Supply System Nuclear Project No. 2 (WNP-2) should be revoked, a stay of construction imposed, the pending application for an operating license denied, and hearings instituted before an Atomic Safety and Licensing Board. The Petition alleged as its supporting bases deficiencies primarily in the construction and management of the WNP-2 facility. Receipt of the Petition was acknowledged by letter of November 9, 1983. By letter of December 20, 1983, I advised the Petitioner that a review of the Petition had been conducted jointly by the Offices of Nuclear

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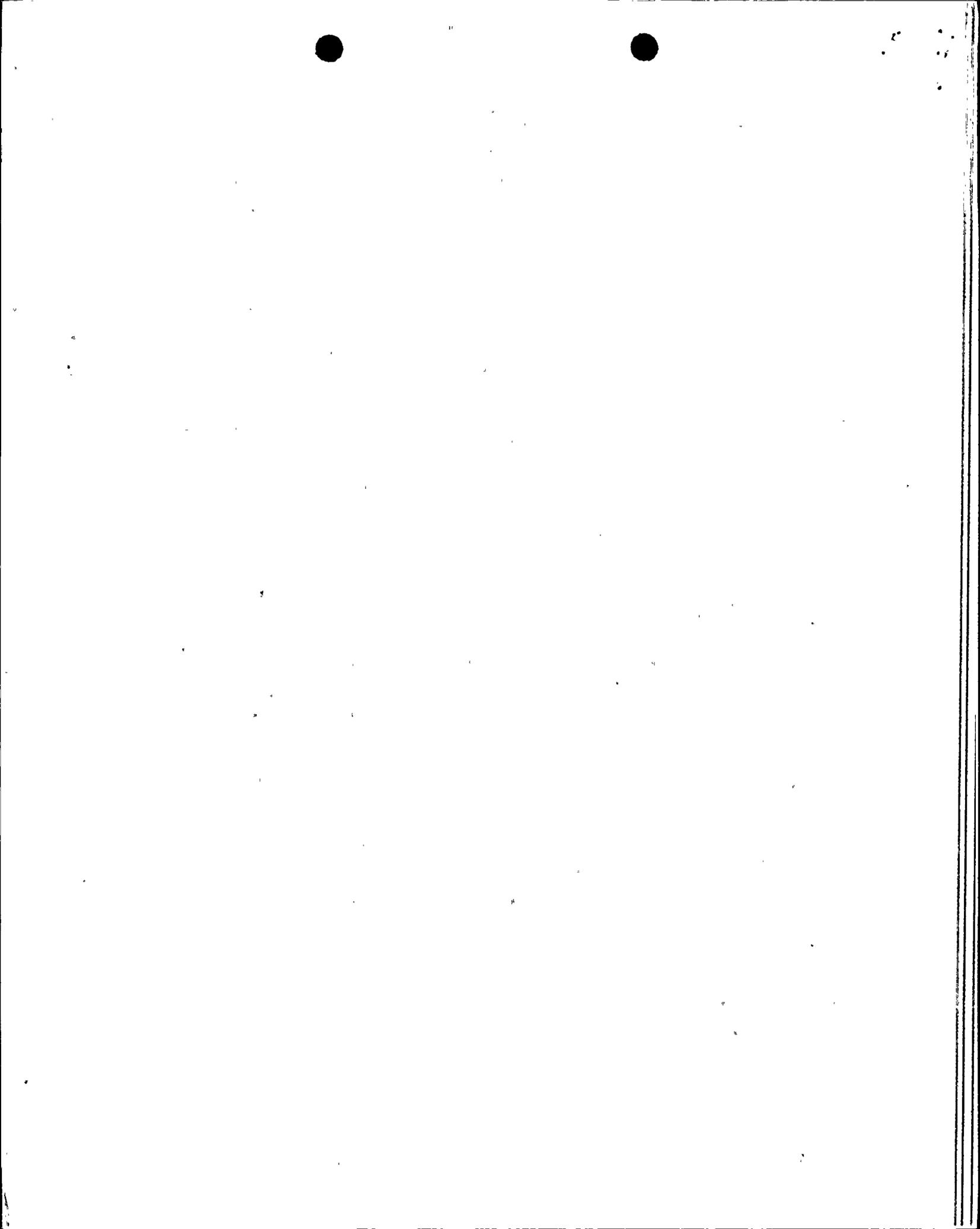


Reactor Regulation, Inspection and Enforcement, and Region V, and that the issues raised in the Petition had been evaluated. That evaluation concluded that the issues raised in the Petition should not preclude the issuance of an operating license for the WNP-2 facility.^{1/} Based in part on the results of that evaluation, the Office of Nuclear Reactor Regulation on December 20, 1983, issued a license to the Washington Public Power Supply System (WPPSS or licensee) to permit fuel loading and low power testing for the WNP-2 facility. My letter of December 20, 1983 further informed the Petitioner that, on the basis of the evaluation conducted to date, I did not intend to grant the relief sought by the Petition and that my formal decision, in accordance with 10 CFR 2.206(b), would be issued in the reasonably near future.

My formal examination of the Petition follows. The Petition raises essentially five issues, each of which is treated in turn.

^{1/} No hearings were held regarding issuance of an operating license. A hearing notice was issued on July 26, 1978. See Receipt of Application for Facility Operating License; Notice of Consideration of Issuance of Facility Operating License; and Notice of Opportunity for Hearing, 43 Fed. Reg. 32338 (July 26, 1978). An intervention petition was filed in response to the notice.

By "Order Subsequent to the Prehearing Conference on January 25, 1979," the Atomic Safety and Licensing Board, on March 6, 1979, concluded that no justification for granting intervention in the operating license proceeding existed. Washington Public Power Supply System (WPPSS Nuclear Project No. 2), LBP-79-7, 9 NRC 330 (1979). On October 9, 1979, the Atomic Safety and Licensing Board issued a "Notice of Dismissal of the Proceeding."



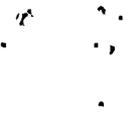
BACKGROUND

To meaningfully discuss the issues raised by the Petition, some background information is required.

WPPSS was issued Construction Permit No. CPPR-93 (Nuclear Project No. 2) by the Atomic Energy Commission in 1973, which authorized construction of the WNP-2 plant. The WNP-2 plant is located near Richland, Washington and consists of one 1100 MWe boiling water reactor of General Electric design and related facilities for use in the commercial generation of electric power.

Early construction activities at WNP-2 were routine; however, in 1978, NRC inspections revealed signs of poor quality construction. Intensified NRC inspection efforts resulted. Several investigations were conducted in response to noted construction problems and allegations. In May 1980, meetings were held between the NRC and licensee upper management to focus needed attention on observed problem areas.

An NRC investigation completed in February 1980 resulted in the imposition of a Civil Penalty in the amount of \$59,500 for identified structural deficiencies in the sacrificial shield wall (SSW); failure to establish and use a suitable test program for the SSW; failure to provide control of special construction processes; various procedural inadequacies; and generally inadequate record keeping practices. A letter was also issued on June 17, 1980 pursuant to 10 CFR 50.54(f) seeking assurance from the licensee that the WNP-2 quality assurance program would be improved and implemented to ensure adequate quality of construction. In addition, the letter requested that the licensee develop a plan for determining the quality of past work. In July 1980, another NRC investi-



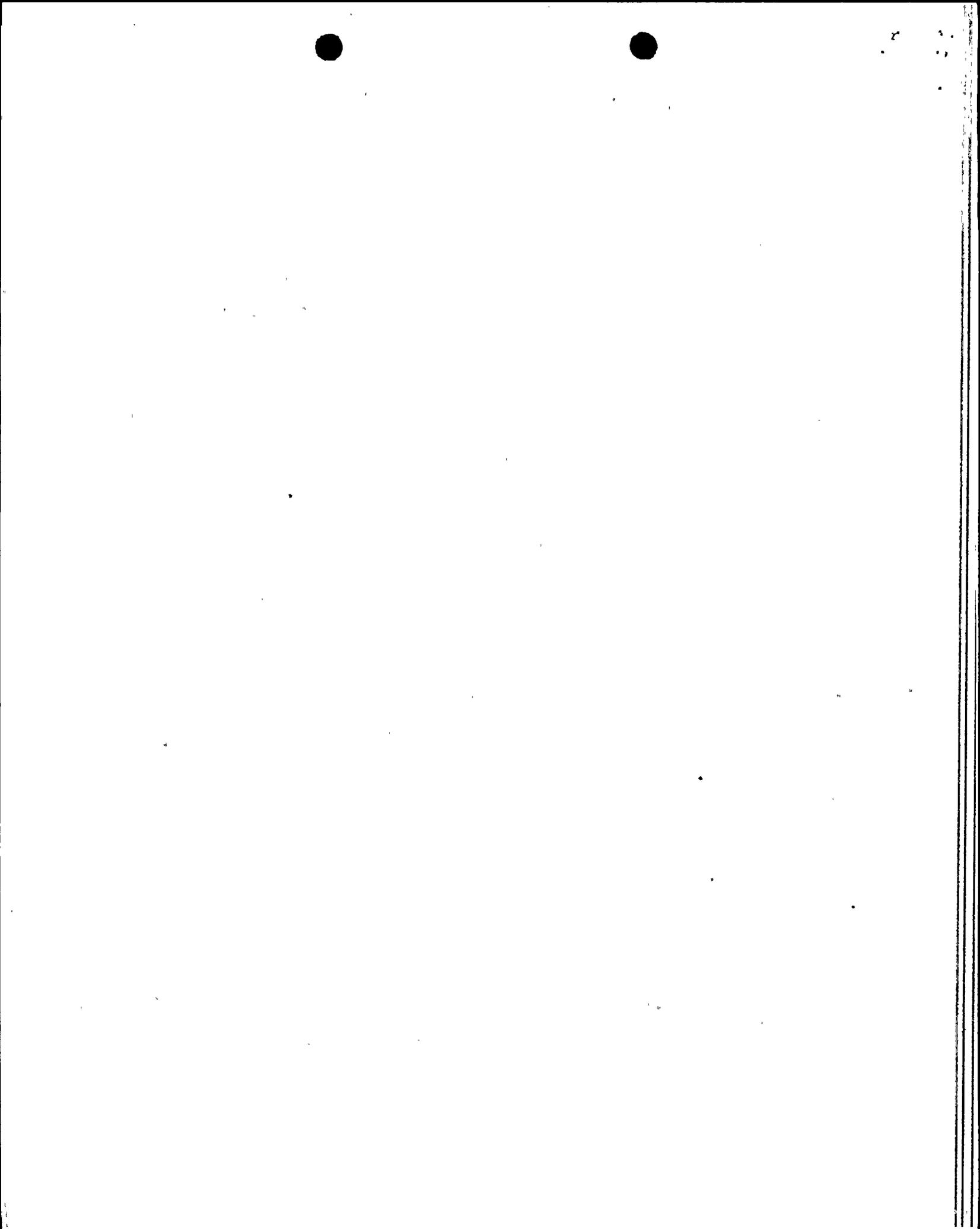
gation resulted in the identification of twelve items of noncompliance which demonstrated a continuing problem in the control of safety-related work being performed by contractors at WNP-2.

The licensee, in response to the enforcement actions, issued stop work orders to all WNP-2 site contractors to permit initiation of appropriate corrective measures. The NRC issued a Confirmatory Action Letter (CAL) to the licensee in July 1980 regarding a stop work order applicable to the principal mechanical contractor. NRC hold points were placed into effect to ensure timely review of the licensee's corrective actions prior to restart of work by the principal mechanical contractor. The NRC inspection force for WNP-2 was supplemented to provide increased audit capability.

The licensee's corrective measures included significant changes to the quality assurance program, including a 100% review and revision of the quality related work procedures. Major personnel changes were made to the site management organization and a new construction manager (Bechtel) was brought in to review the adequacy of previous work and provide surveillance over new work. In 1981, safety-related construction work was permitted to resume.

In response to NRC concerns about the quality of past construction work, the licensee initiated a Quality Verification Program (QVP)^{2/} to

^{2/} The initially conceived program was titled Reverification of Completed Safety-Related Work (RCSW); it encompassed both work restart and the projected hardware reinspection activities. After work restart, the reinspection activity was titled the Quality Verification Program (QVP). Detailed record review activities were later also encompassed by the QVP, as were other special review and rework programs at the site. The QVP was loosely referred to as the reverification program. A separate design oriented review was performed during 1982-1983, titled the Independent Design Verification Program (IDVP). The QVP and IDVP were together considered the Plant Verification Program.

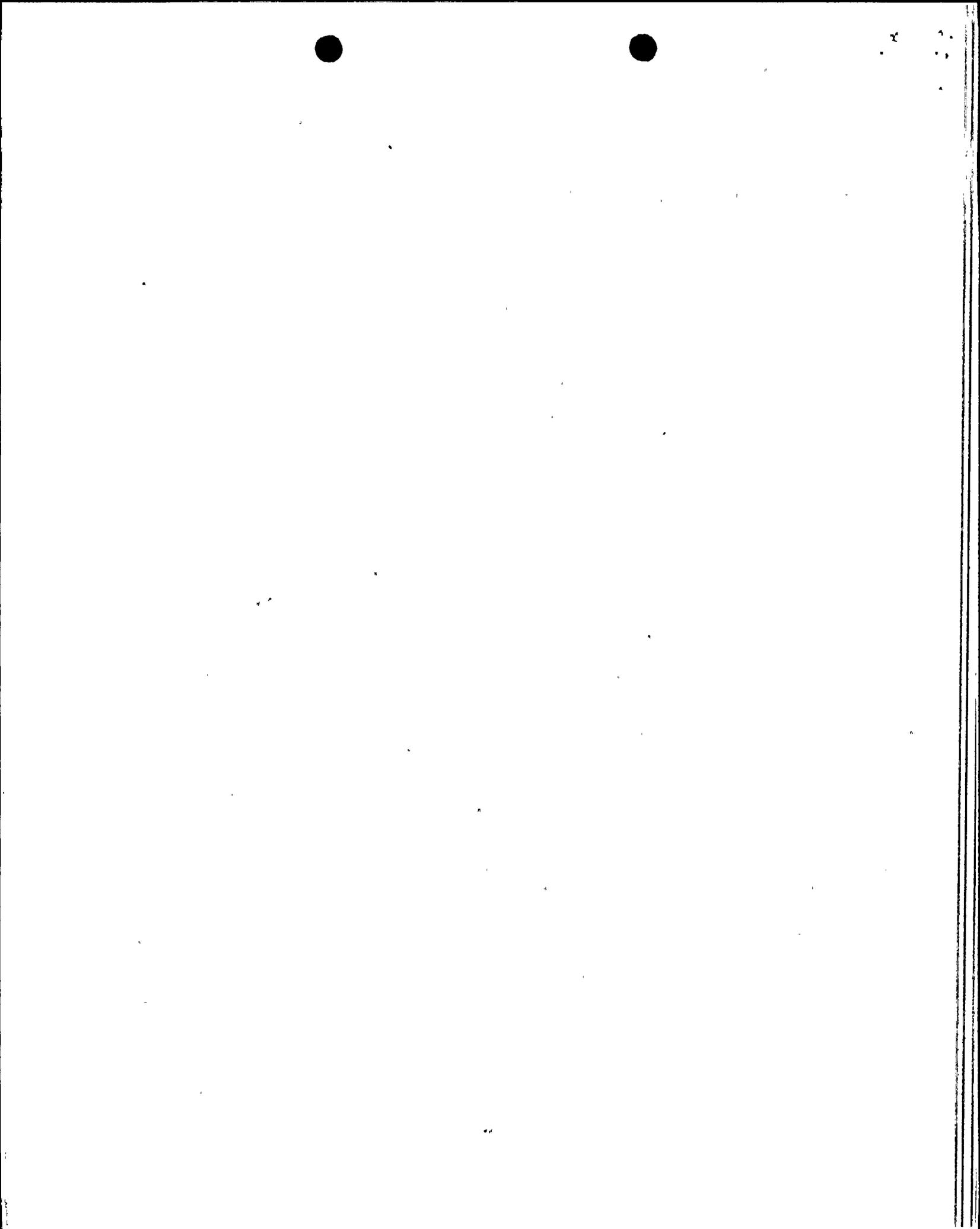


determine the quality of work completed up to 1980. This effort, performed in large part by the various contractors involved, was conducted under surveillance by the newly hired construction manager (Bechtel) in accordance with approved procedures. The NRC staff performed independent audits of the overview effort, inspected samples of QVP documentation, reviewed report findings and independently verified selected pieces of WNP-2 hardware.

The NRC Construction Appraisal Team (CAT)^{3/} also included various pieces of hardware in its special site inspection during 1983. This inspection identified various discrepancies between as-installed pipe supports and the construction drawings, reinforcement steel placement deficiencies, several welding concerns and questionable bolting installations. These matters were referred to the the NRC Region V inspection staff for followup and resolution in accordance with standard practices.

From the time of the identification of the major construction problems noted above, the NRC staff has conducted a series of Systematic Appraisals of Licensee Performance (SALP) reviews in connection with the WNP-2 facility. These reviews provided a basis for the NRC to evaluate the positive and negative attributes of the licensee's performance. These reviews assisted in improving both licensee performance and the effectiveness of the NRC regulatory program.

^{3/} The Construction Appraisal Team, developed as an NRC headquarter function, focuses primarily on determining the quality of safety-related structures, systems and components by direct hands-on inspections. To a lesser extent, the licensee's quality assurance program is relied on by the team to confirm the findings of the hands-on inspection results. The CAT is made up of highly qualified NRC and independent contractor personnel selected to provide in-depth evaluations of plant hardware.

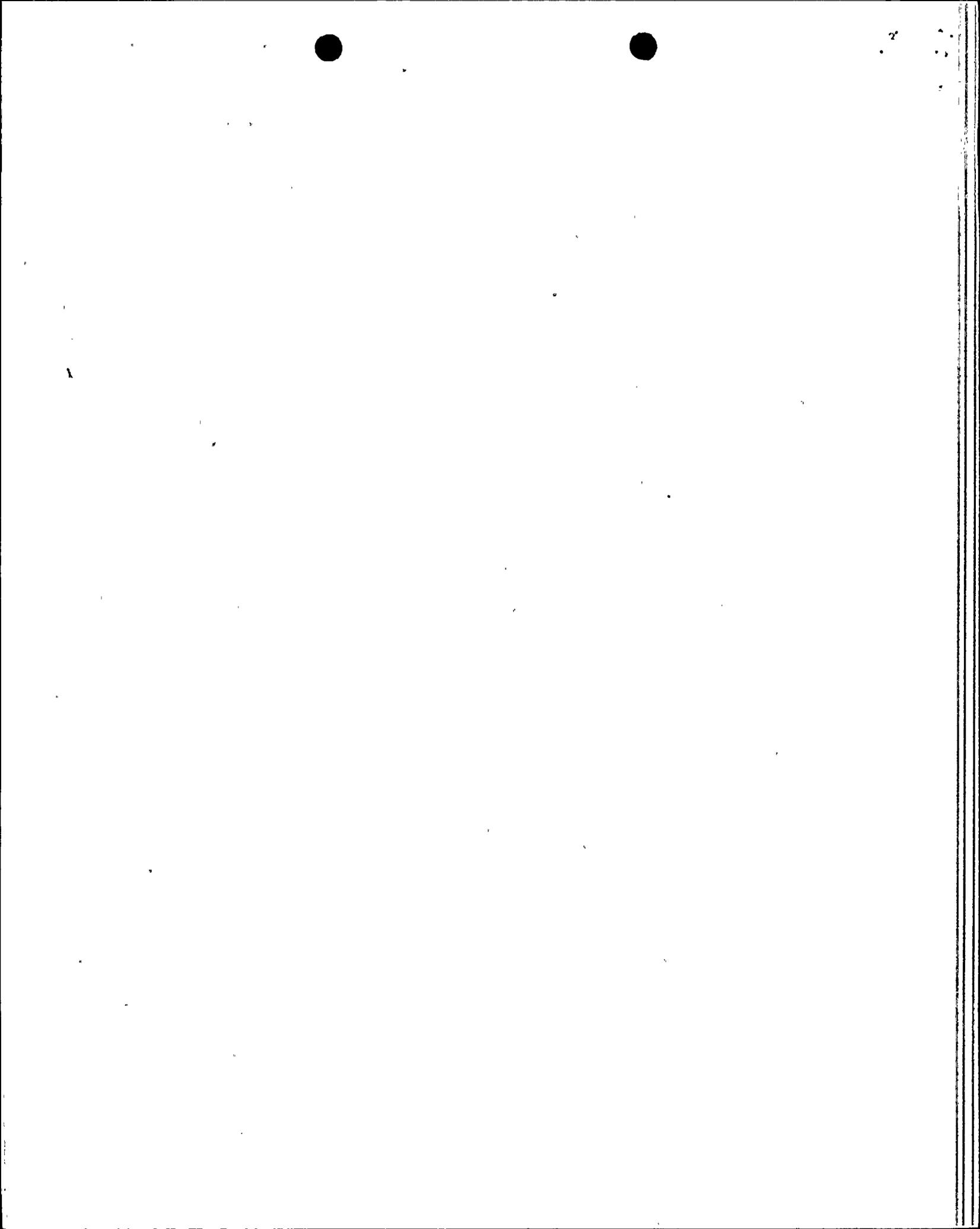


The first SALP Board findings at WNP-2 for 1980 centered primarily on significant weaknesses in various aspects of the licensee's quality assurance program. Other findings dealt with a lack of control over the quality of work by the site contractors. The associated SALP report discusses concerns over the number and type of noncompliance items in areas such as safety-related structures, piping and pipe supports, electrical installations and record keeping practices.

The SALP Board findings for 1981 recognized significant changes the licensee had made in the WNP-2 construction organization. Experienced management personnel had been brought in to implement newly established project management programs to better control the quality of construction. However, the Board also noted that the licensee had been remiss in moving ahead in some areas without making associated changes to the program plan and developing and issuing needed procedures in a timely manner. Other items were identified which highlighted concerns over incomplete corrective measures, design changes, piping supports, and timeliness of responses to NRC licensing matters.

The SALP Board findings for 1982 found the overall performance of the licensee to be acceptable. However, two weaknesses were identified in the areas of design and installation of electrical systems and the implementation of proposed corrective action relative to a reported construction deficiency.

The most recent SALP Board review on the WNP-2 project for 1983 found that the licensee has been responsive to the previous findings of the SALP reviews and that acceptable corrective actions have been initiated, supervised and directed at the highest level of management. While the Board's findings were favorable, the licensee was strongly encouraged to be especially alert for signs of performance deterioration during completion of the project.



The SALP reviews at WNP-2 served, in large part, to focus attention on the licensee's capability to provide prompt and effective corrective actions to identified construction problems. SALP Board findings, as a matter of policy, have been acted upon by the cognizant NRC regional and site staff as needed to bring about desired changes in inspection emphasis and followup of identified weaknesses.

During the latter part of 1982, NRC staff discussions with the licensee led to the development and implementation of an Independent Design Verification Program (IDVP) effort at WNP-2. This effort was directed toward gaining additional assurance regarding the as-built design of the facility and was carried out by licensee staff personnel who were independent from WNP-2 design and construction responsibilities. This effort centered on three safety-related reactor systems. Also studies were conducted to evaluate operational interaction between the reactor systems. An independent consultant firm, Technical Audit Associates Incorporated (TAA), evaluated the technical adequacy of the IDVP and audited its entire implementation. The NRC staff has completed its evaluation of the program and its findings and concludes that there are no indications of significant deficiencies in the WNP-2 design process and that the design verification program provides additional confidence that acceptable QA design practices were followed during construction of the facility.

Before discussing each one of the five major areas identified in the Petition, it is important to recognize that the Petition provides no new information. The Petition consists almost exclusively of excerpts taken from findings of NRC Inspection Reports. The NRC inspection program recognizes that deficiencies will be found as a result of inspection



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activities. Correction action is required for every violation of NRC requirements. See 10 CFR 2.201. Consequently, all the allegations in the Petition which stem from inspection findings have been the subject of corrective action and have been adequately resolved.

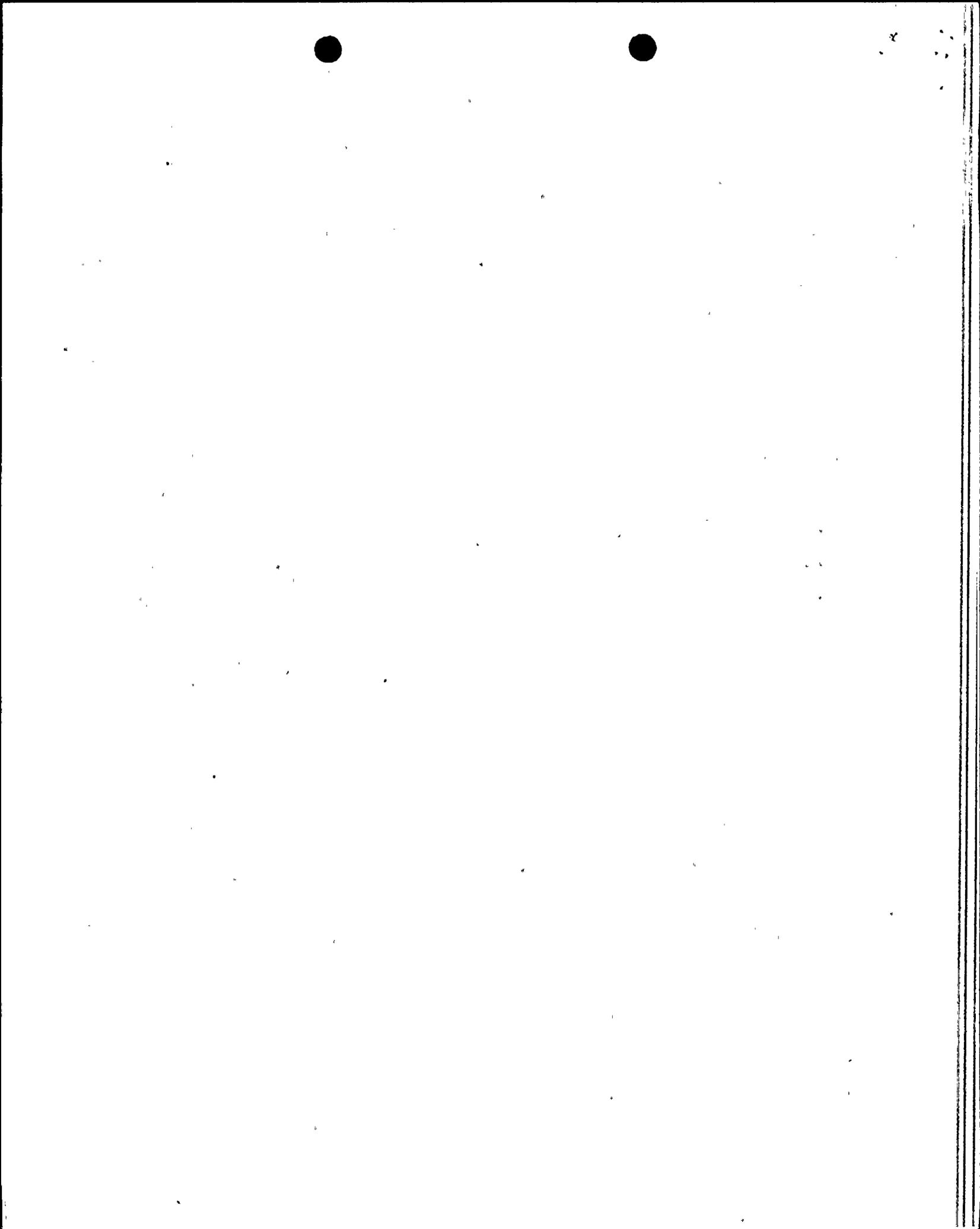
With respect to the other allegations raised in the Petition, the NRC has been generally aware of these matters and had taken action with respect to them to the extent appropriate.

The Petition does not provide new information but only restates that which the NRC was already aware of and had already addressed in various inspection and investigation reports. Consequently, the response to the Petition has been organized around the five principal issues raised by the Petitioner to indicate how the corrective action process worked to resolve the various concerns, rather than by a detailed discussion of each of the scores of allegations contained in the Petition which have already been looked at and resolved once before during the inspection process.

PRINCIPAL ISSUES RAISED BY PETITIONER

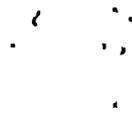
I. The Quality Assurance Program at the WNP-2 Facility

The first issue raised by the Petitioner concerns allegations of numerous failures by WPPSS to implement an adequate quality assurance program at the WNP-2 facility as required by 10 CFR Part 50, Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants". The Petitioner discusses a number of areas wherein it is alleged that the quality assurance provisions of Appendix B have not been



met. Such areas include design control, record control, worker qualifications, and materials control. The Petitioner refers to various inspection findings and reviews conducted by either Region V or the Office of Inspection and Enforcement in support of the contention that quality assurance at the WNP-2 facility is deficient. The NRC inspection activities routinely find deficiencies in the performance of construction activities at nuclear power plants. It is not unusual, therefore, that such deficiencies were identified in the NRC Inspection Reports referenced in the Petition. NRC inspection activities involve the auditing of construction of nuclear facilities with the purpose of assuring that the overall construction program in place at a construction site is effective in ensuring that proper quality standards are maintained. Such inspection activities routinely result in enforcement actions and the identification of unresolved items. Isolated deficiencies in the licensee's program do not necessarily undermine the program to such an extent as to give rise to a significant safety concern. Given the magnitude of construction activities associated with completing a nuclear power plant, even numerous deficiencies in such construction activities do not necessarily give rise to a significant safety concern. As has been recently recognized by the Atomic Safety and Licensing Appeal Board,^{4/} it would be unreasonable to hinge the grant of an NRC operating license upon a demonstration of error-free construction. What is required in any inquiry is a careful consideration of whether all ascertained construction errors have been cured and whether the errors indicate that there has been a breakdown in quality assurance procedures of sufficient dimension to

^{4/} Union Electric Company (Callaway Plant, Unit 1), 18 NRC 343, 346 ALAB-740, (1983).



raise legitimate doubt as to the overall integrity of the facility and its safety-related structures and components.^{5/}

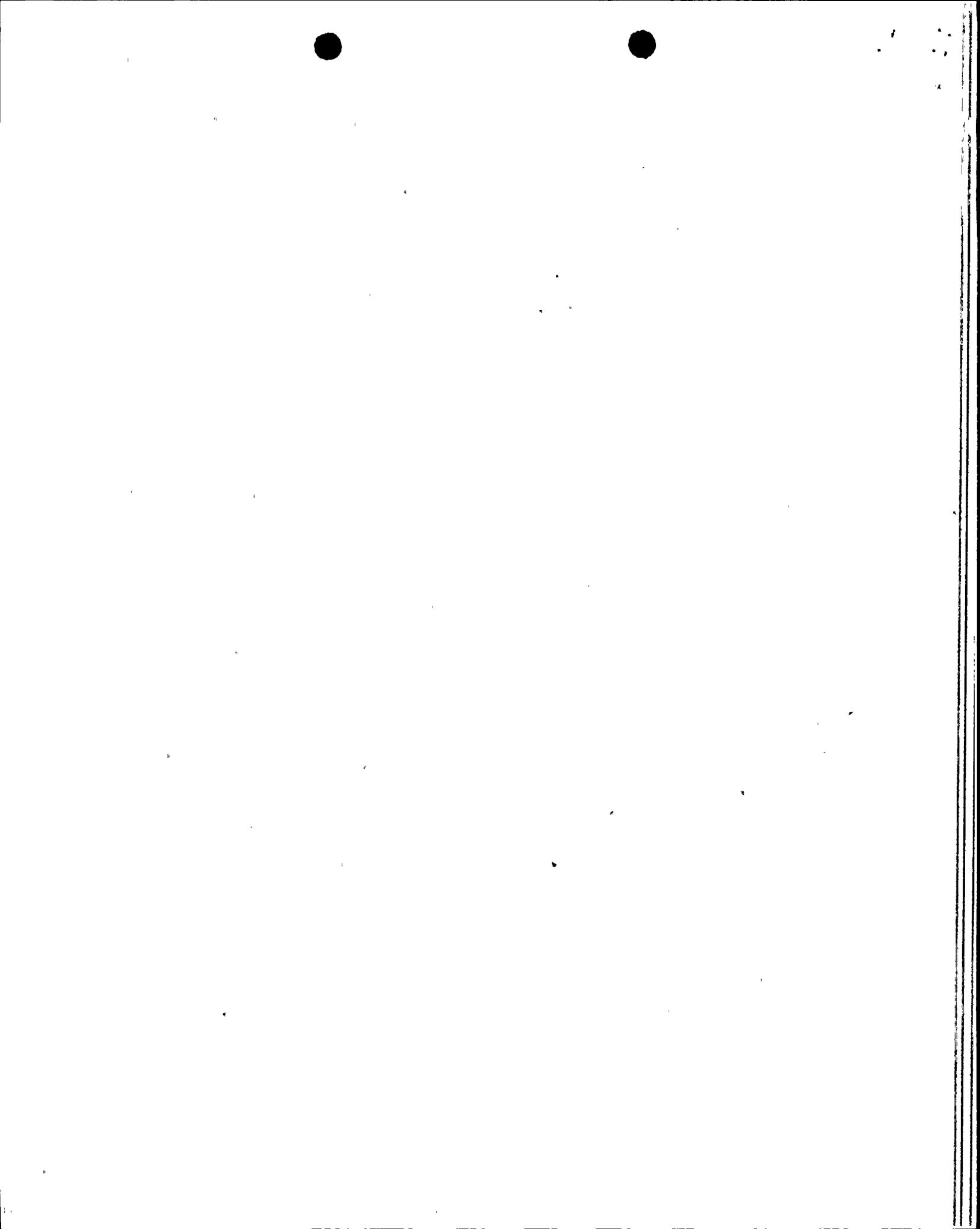
The following specific categories of quality assurance issues raised by the Petition have been resolved as follows:

A. Design Control

The Petitioner contends that the licensee experienced an ongoing failure to conform to applicable design criteria, specifically Criterion III of 10 CFR 50, Appendix B, Design Control. The Petition references several NRC design and construction inspection observations which discuss the standby service water system (SSWS). The Petitioner concludes that there has been a general failure by the licensee to conform to applicable design criteria with respect to the SSWS. The Petition further presents NRC findings regarding electrical cable separation and concrete structures, and concludes that lack of design control in these areas has resulted in failure to meet the appropriate design criteria. The Petition then concludes that there is no reasonable assurance that Criteria III of Appendix B has been met. These matters are discussed below.

In the 1981 Inspection Report 50-397/81-17, referenced in the Petition, the NRC inspector observed that forty-nine questions had been identified by the architect-engineer during a design audit of various quality systems, including the SSWS. The NRC inspector noted the absence of anyone's assessment of the significance of these questions relative to the effectiveness of the design verification quality assurance program and concluded the design verification process appeared to deserve further review. The licensee committed at that time to address the inspector's

^{5/} Id.



concerns prior to continued execution of the program. The NRC subsequently reviewed details of the existing design verification process, both at the site and the home office of the architect engineer, and concluded that the process in-place was acceptable.

In 1982 the NRC observed that Drawing Interim Revision Sheets (DIRs) on the SSWS had not been compiled and incorporated into composite drawings at the frequency called for by procedures and questioned whether working drawings were correct. This was considered to be a relatively minor administrative matter and no items of noncompliance or unacceptable work were identified. The drawings were subsequently updated and controls were adopted and initiated to assure that working drawings were correct.

The SSWS did not provide the design coolant flow for certain pieces of equipment during the initial preoperational tests. On August 11, 1983, the licensee properly reported this information to NRC in accordance with 10 CFR 50.55(e) and took appropriate corrective actions, including the installation of flow restricting orifices, valve position adjustments, and system cleaning. Additional permanent orifices will be installed to preclude the need for continued valve position adjustments.

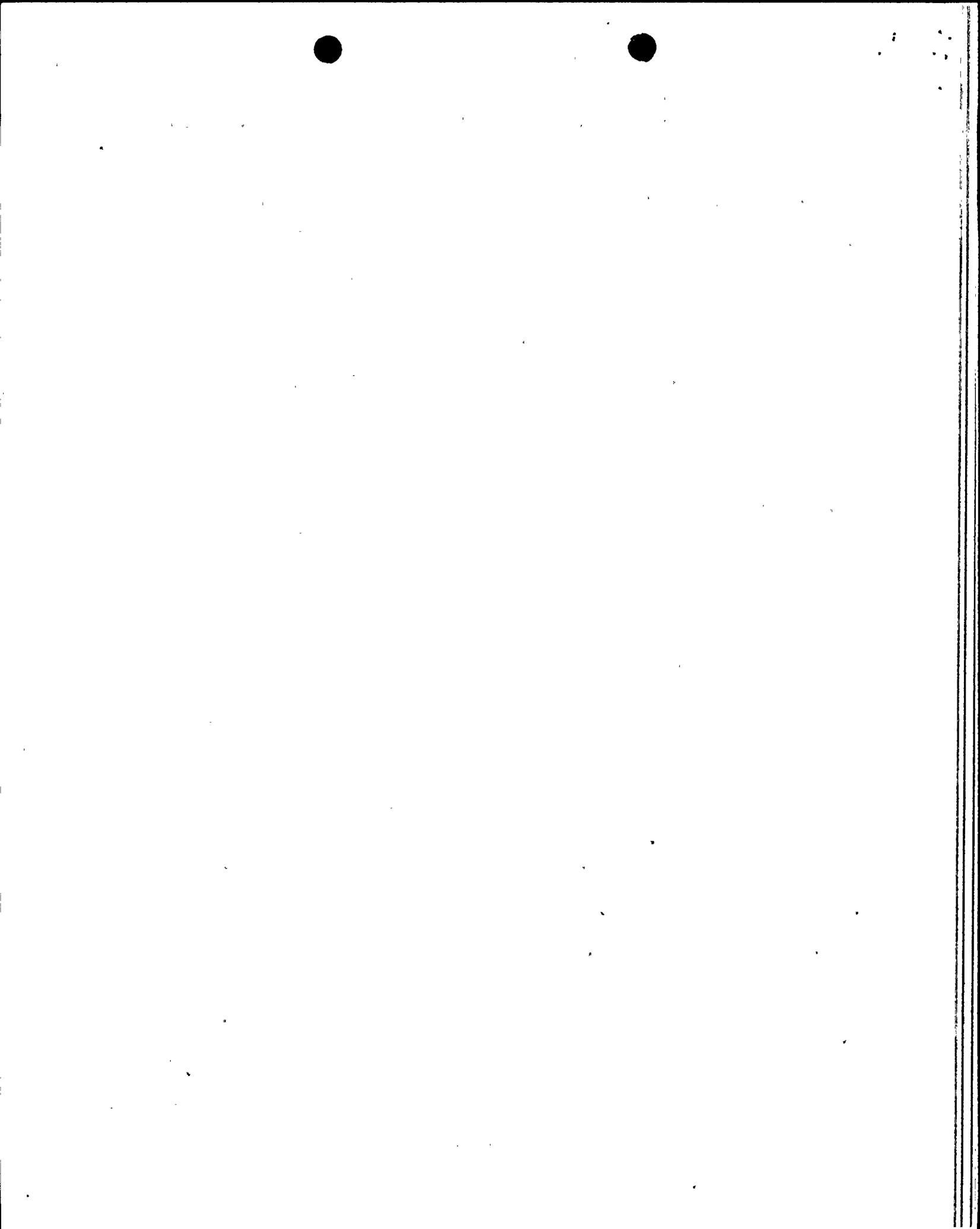
With respect to electrical cable separation, the 1982 SALP Board expressed concern and the need for a clear definition of acceptance criteria for insuring the electrical independence of redundant safety-related circuits. This area relates to NRC observations and findings documented in various inspection reports and management meetings from 1978 through 1983 regarding the licensee's efforts to interpret industry standards and define field inspection criteria for electrical cable installation separation inspection. This matter has been reviewed by the



NRC licensing technical staff of the Office of Nuclear Reactor Regulation and final agreements have been reached on the appropriate criteria and the nature of field inspections. The NRC staff noted the resolution of this matter during the 1983 SALP review.

With respect to electrical cable installation, the CAT identified some errors in cable pull slips but did not identify any improperly installed cables associated with these errors. Also, field variations noted within a group of single division wall penetrations do not violate separation requirements. With respect to cable tray separation, the licensee has now considered installation tolerances and has conducted physical walkdown inspections of tray installations and has taken appropriate corrective actions for noted discrepancies.

With respect to concrete structures, the CAT identified a number of deviations in the structures. The CAT identified reinforcing steel spacing discrepancies in several areas, and an inability to locate some steel dowels or determine reinforcing steel patterns within the areas of limited excavation of concrete. The licensee subsequently performed additional concrete excavations and obtained additional data. NRC inspectors, including CAT representatives, performed additional inspections of licensee actions. The nature and extent of the discrepancies and their impact on the ability of the structure to take its design loads has been considered by the licensee assuming worst case loadings and discrepancies. Evaluations were also conducted by independent third parties. The as-built structures were found to be capable of substantially exceeding design loads. The deviations would have initially been acceptable under the American Concrete Institute Code had they been evaluated before rather than after the fact. No programmatic changes were required since



all civil structures had been completed and no additional work is contemplated. The structural significance was also evaluated and found acceptable by NRC licensing technical staff of the Office of Nuclear Reactor Regulation. These conclusions are documented in Supplements 4 and 5 to the Safety Evaluation Report (SER)^{6/} for the WNP-2 facility.

After the July 1980 stop work action, the licensee conducted a work restart and work reverification program as part of the QVP and reviewed the past design change control and nonconformance control systems. This included reviews of samples of the different kinds of design change procedures used on the project and reviews of the engineering disposition of nonconformance report documents. This effort was reviewed by the NRC staff which concluded that the design change control process had been improved substantially and was now acceptable. Since that time, design change control has been satisfactory.

To provide additional assurance of proper design control, the licensee conducted its IDVP to review the design activities performed by the architect engineer, using licensee engineers not associated with the WNP-2 project design and construction responsibilities. Overview audits were conducted by an independent audit organization, TAA. The NRC staff has reviewed the results of the IDVP and concludes that it does provide reasonable assurance that the WNP-2 facility has been designed in accordance with Criterion III of 10 CFR Part 50, Appendix B, Design Control.

^{6/} "Safety Evaluation Report Related to the Operation of WPPSS Nuclear Unit No. 2", NUREG-0892 and Supplements 1 through 4. Docket No. 50-397. Supplement 4 was issued in December 1983; Supplement 5 is in preparation and will be issued shortly.

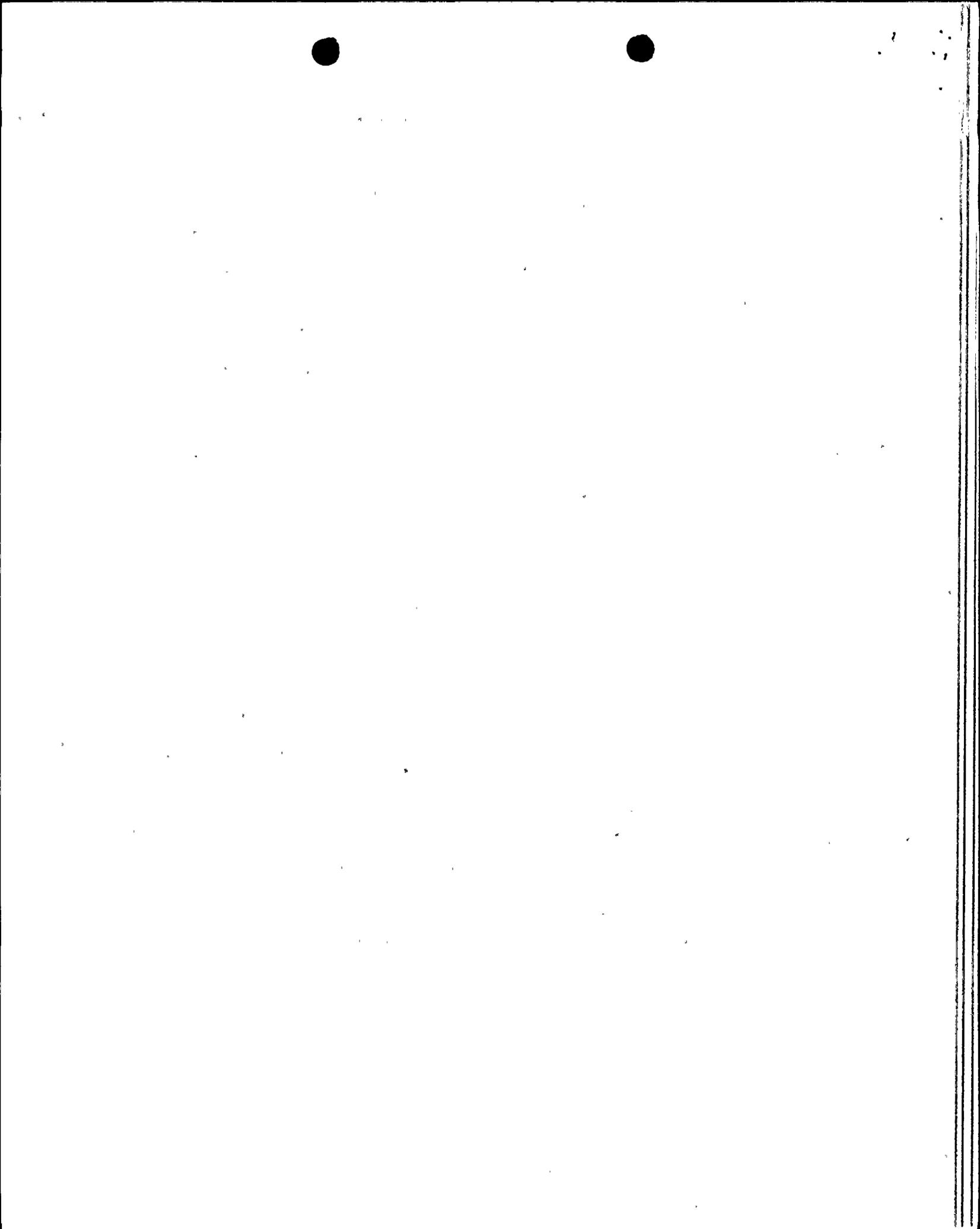


B. Record Control, Worker Qualifications, Material Control, and Maintenance and Preservation

The Petitioner contends that NRC inspection data shows that: (1) the licensee has had a continuing inability to produce adequate documentation required by NRC regulations; (2) engineering, quality assurance and craft personnel were not properly qualified and/or trained; (3) measures had not been established for the identification and control of certain materials to prevent the use of incorrect material; and, (4) there has been a continuing problem with site housekeeping, cleanliness control, and preventative maintenance for safety-related systems or components. These areas are addressed below.

The subject areas have been periodically audited by NRC inspectors as a part of the NRC's routine inspection program to assure that an acceptable level of performance is being maintained by the licensee and its contractors. The examples the Petitioner describes are generally reflective of our inspection experience at this and other construction sites. The licensee has been responsive to the inspection findings and has taken the necessary corrective actions to resolve each of the issues identified.

The licensee experienced problems with generation of quality assurance records prior to July 1980. Default of some contractors contributed to the loss of some records, as did deferrals of final reviews of certain work packages. Through 1980 and after, efforts were undertaken by the licensee to identify the discrepancies in past records and resolve any omissions, discrepancies, and deficiencies. Corrective actions were taken in the specific areas mentioned in the Petition. The licensee's

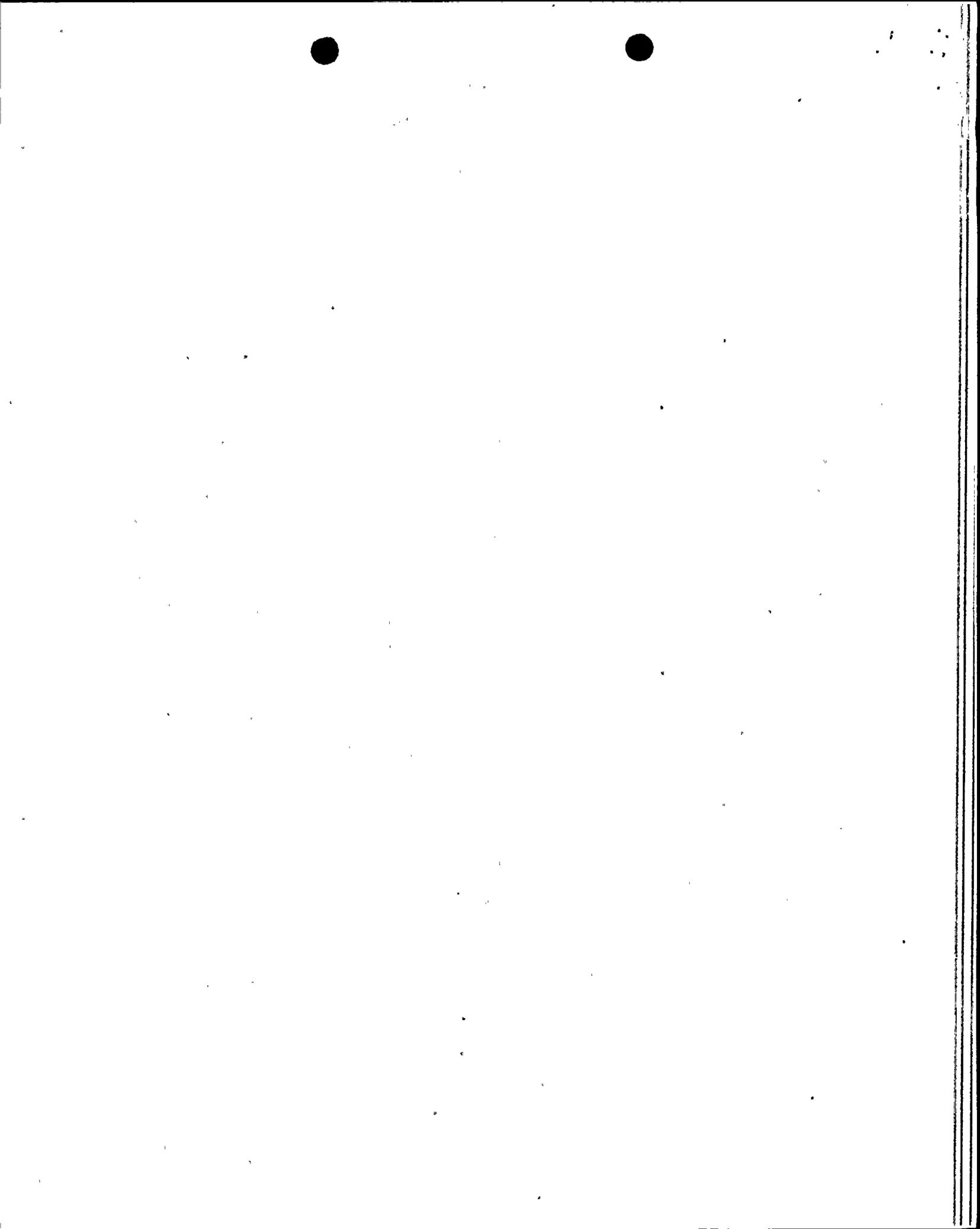


corrective action programs, including quality control reinspections, have been monitored by NRC inspectors. Corrective actions and resolutions, including CAT findings, have been documented in NRC Inspection Reports. No deficiencies remain outstanding.

With respect to worker qualifications, the licensee, as a part of the QVP, conducted reviews to determine the nature of design change type actions by engineering personnel, and found such actions acceptable. . These reviews were also used to evaluate engineering qualifications. Past work performed by crafts and inspected by field quality control personnel contained discrepancies which may have been due to qualifications problems or lack of training. Work and records associated with such work have been reexamined under the QVP and the as-built programs to provide additional confidence of worker and inspector qualifications. After the July 1980 period, the indoctrination and training programs for craft personnel and quality control inspectors were reinforced.

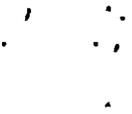
The Sandler Affidavit contends that worker qualifications were still considered to be a problem at WNP-2 as late as November 1982 based on a discussion with an NRC inspector. Specific issues, including the discussion with the NRC inspector, as related to the Sandler Affidavit regarding welding engineers and quality assurance personnel qualifications are discussed in Appendix A. Resolution of these items, including CAT findings, has been documented in NRC inspection reports.

With respect to material control, there have been isolated cases of material control discrepancies even though the licensee and its contractors had established general and specific programs for material identification and control in accordance with NRC regulations. The CAT observed that an incorrect grade of nuts appeared to have been installed



in some pump couplings, pipe flanges, and pressure relief valves. Of 21 bolted connections inspected, identifying markings were not observed on 5. Markings indicated that an inferior grade had been used on 6 others. Subsequent removal and inspection of the nuts showed that some markings had been concealed on the underside of the nut. The licensee conducted a complete reinspection of the fasteners for mechanical equipment and identified that only Grade 2H and Grade 7 nuts had been used. These are of equivalent physical and chemical properties for the temperature service of the equipment since physical properties only differ above approximately 900°F. For flanges, the architect engineer considered the highest fastener loading with the lowest commercially available grade bolting and found this within the Code allowable bolt stress. The licensee also corrected the minor discrepancies identified in mixed nuts in the material bins at the Bechtel warehouses and audited the other bins. This audit was performed in conjunction with the investigation of apparent improper bolting materials in equipment flanges and couplings.

NRC observations in late 1978 through early 1980 identified weaknesses in the licensee's site housekeeping and system cleanliness control, and equipment preventive maintenance program during construction. Repetitive findings in this area in 1979 resulted in NRC enforcement actions which subsequently led to effective corrective measures by the licensee. Continued NRC attention to this area identified a few additional minor discrepancies in 1981. The enforcement history in this area does not support the existence of significant uncorrected defects in plant structures or equipment. System flushing and preoperational testing provided additional means for the identification and correction of conditions which may have resulted from past weaknesses in the cleanliness, housekeeping and preventive maintenance programs.



With respect to preventive maintenance, the CAT observed that no deficiencies were noted with the preventive maintenance requirements or actions taken for the sample of 36 components reviewed. The CAT further observed that the system appeared to be effective. The CAT concluded that the system currently in place is consistent with regulatory requirements but requires further updating, which is now being done by the licensee.

C. Quality Class II

The Petitioner alleges that there is no reasonable assurance that the licensee has or will apply installation and inspection techniques to Quality Class II (QC II)^{7/} equipment important to safety and governed by Criterion II of Appendix B. While the Petitioner acknowledges that Appendix B is generally applied to Quality Class I (QCI) materials and equipment,^{8/} the Petitioner alleges that there are numerous instances where QC II equipment is important to safety but Appendix B is not applied. The Petitioner describes CAT questions regarding quality assurance measures for supports of Quality Class II/Seismic Category I installations which could impact safety-related equipment in the event the support fails.

The licensee has always applied quality assurance measures to QC-II/Seismic Category I installations. For piping and component supports, this included design by the architect engineer to QCI standards and installation to QCI procedures. In 1981, subsequent to the June 1980 work stoppage, the new construction manager concluded that rework and new installations of QCII/Seismic Category I items did not require all of the same documentation and inspection activities required for QCI items as was the case prior to the

^{7/} QCII items are those items that do not have a safety function but their failure could impact safety-related equipment.

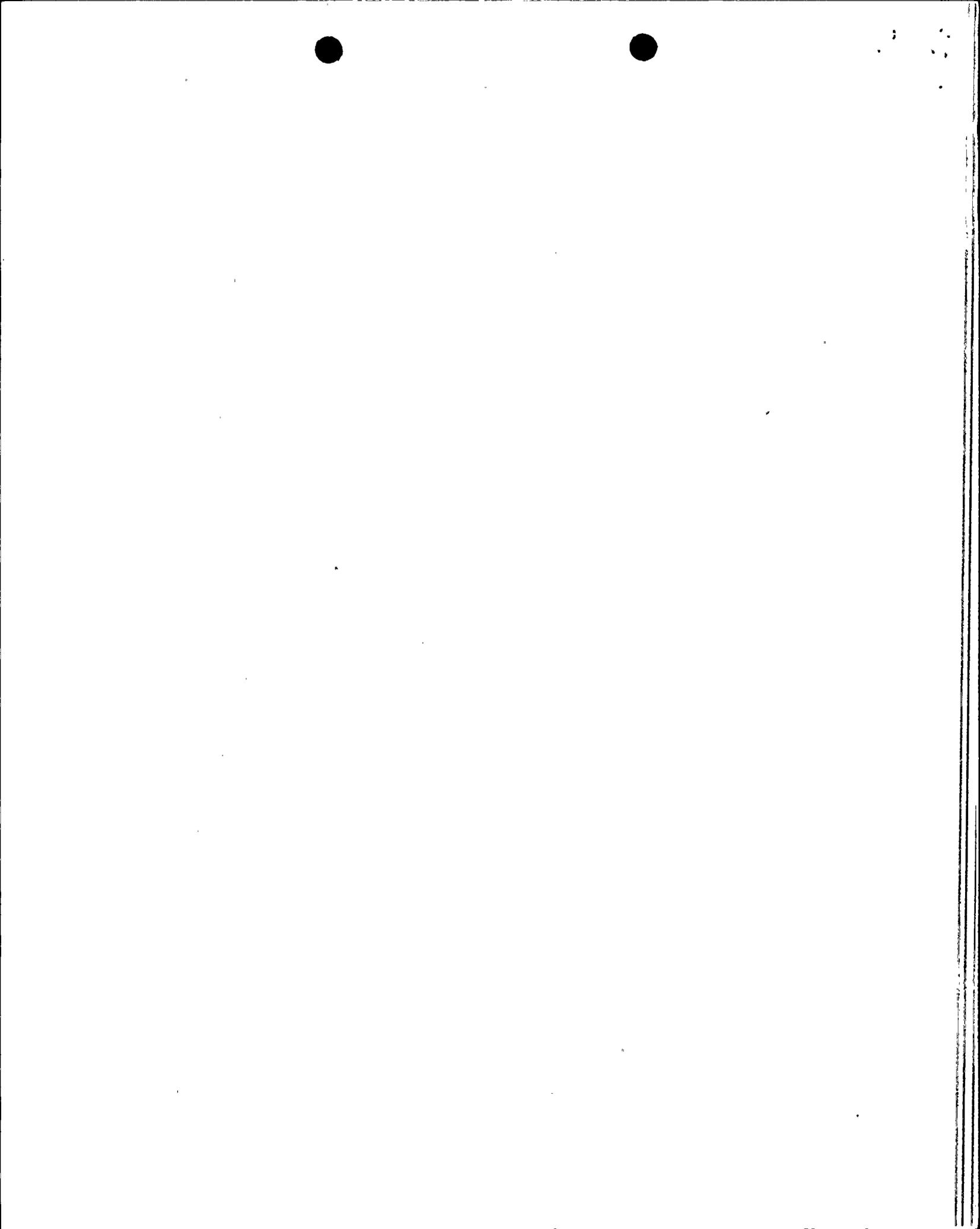
^{8/} QCI materials and equipment have been defined as safety-related components and are specifically identified in the licensee's Final Safety Analysis Report (FSAR).

stop work order. The program was therefore revised to permit field inspection by the construction field engineers responsible for this work. The NRC reviewed this change and determined it to be acceptable and equivalent to practices at other nuclear plant construction sites.

The Petitioner notes that the CAT found that the various quality control inspection and as-built programs have not been totally effective in identifying installed hardware that does not meet design requirements. CAT also found that the accuracy of previous inspection and as-built information for QCII/Seismic Category I supports and restraints did not appear to provide sufficient confidence in the acceptability of this hardware. An NRC Notice of Violation was issued relative to this matter. The licensee corrective actions, to problems identified by the CAT, included inspections and engineering evaluations, including use of a third party engineering organization to assess the installations. The evaluation data showed that none of the deviations found would have a significant effect on the structural integrity of the supports. The evaluation data was reviewed by the NRC staff which concluded that the as-built QCII/ Seismic Category I structures and supports provide adequate margin of safety and are consistent with NRC requirements. The Office of Nuclear Reactor Regulation with responsibility for licensing the WNP-2 facility has reviewed the CAT concerns with representatives of the CAT organization and concluded that there are no outstanding issues.

D. Procedures

The Petitioner contends that procedures have not been properly produced, reviewed, and utilized, and that there has been a failure to



properly use procedures at WNP-2 affecting preoperational testing, environmental sampling, reverification, and systems lineup, which continues to this day.

The procedures in use at WNP-2 were generated by various contractors engaged in work on the project to govern their internal activities and to interface with other organizations at the site. All contractors were required to have quality assurance programs for safety-related work. Each contractor's internal quality assurance organization included a quality control section for direct inspection of hardware to assure compliance with procedures and/or specifications. The contractor organizations included quality assurance audit sections, for assessing internal compliance with procedures by all elements of the organization. In addition, the construction manager (Burns and Roe) had oversight responsibility over the site contractors, which included review of each contractor's work procedures. Such reviews were conducted by segments of the Burns and Roe organization staffed with personnel with appropriate qualifications. Technical, contractual or quality assurance aspects were considered by the organizational element most familiar with the subject, and procedures were routed to such elements for review.

The Burns and Roe organization included technical groups to assist the contractors in handling and processing of field identified problems prior to submittal to design engineering. The construction manager also included a quality assurance staff to perform daily surveillance over the activities of the site contractors, and to perform formal audits of the contractors and the construction manager's own internal organization. As a part of the surveillance function, the construction manager's quality assurance staff received copies of the contractor's work procedures for comment regarding inclusion of quality assurance program requirements.



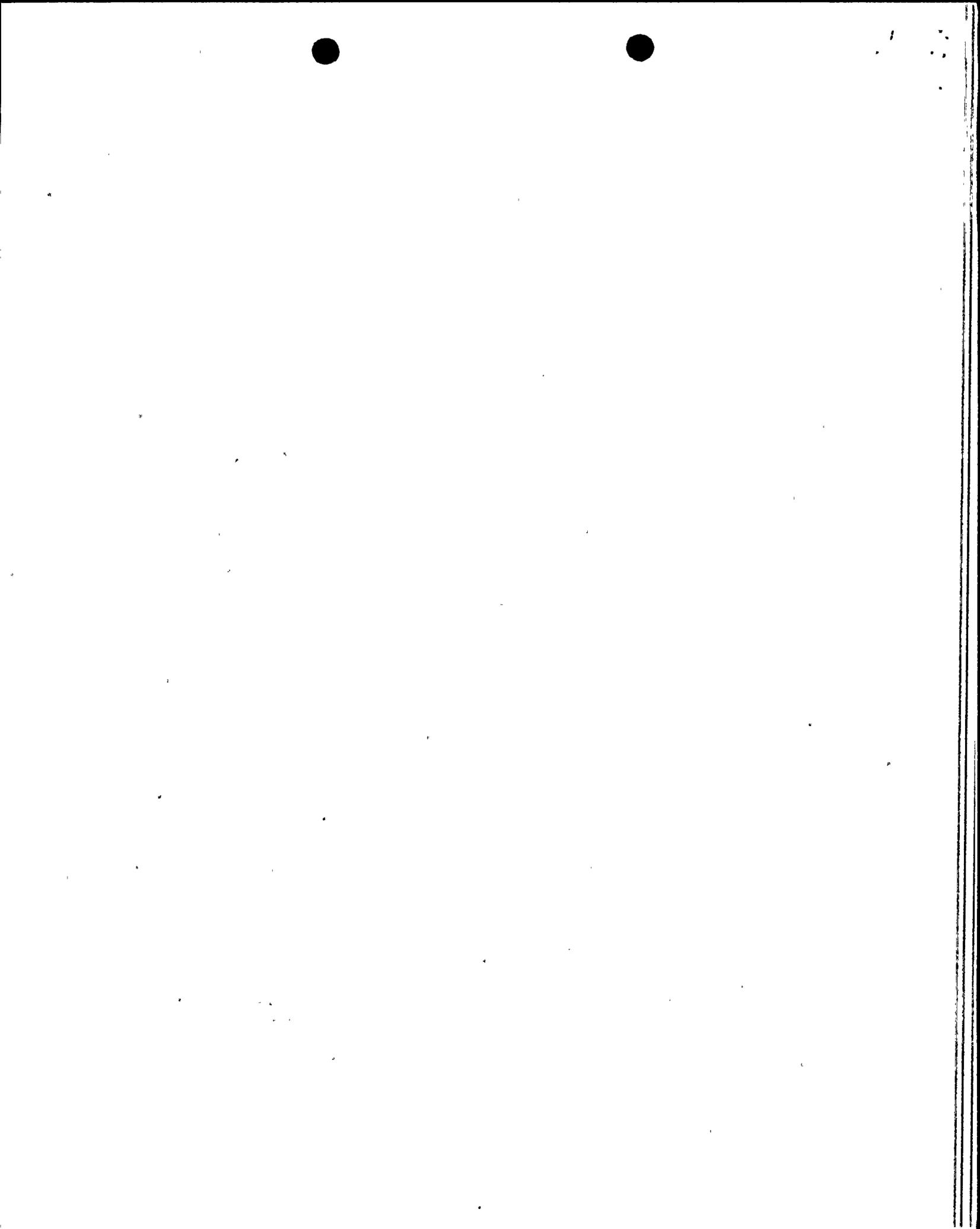
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The coordinating function for both technical and quality assurance comments was generally performed by project engineering.

The NRC staff generally performed monthly inspections of work procedures, in-process work, and records. The inspectors looked for compliance with applicable codes, standards, commitments to the NRC, and additional specification requirements imposed by the architect engineer.

As a result of these reviews and other associated work experiences, the various work procedures were revised many times. Some revisions were necessary to resolve ambiguities or errors, improve methods of performance, and to reflect design changes. Some changes were made to prevent recurrence of situations identified by auditors or NRC inspectors.

As a result of the NRC inspection findings from 1978 through 1980, indicating numerous deficiencies in implementing procedures, the licensee stopped work in July 1980 and initiated a complete review of the work procedures of each contractor engaged in safety-related work. Contractors were required to perform comprehensive reviews of their quality discrepancy documents to identify negative trends. These trends were considered when the new procedures were reviewed to assure that program changes would be implemented to preclude recurrence. Their revised procedures were then reviewed by a task force of independent reviewers under direct management of the licensee. These reviews were generally completed in early 1981. The task force compiled the significant discrepancies identified during the reviews and provided these and the backup data sheets to the contractors for consideration in the subsequent record review and hardware reinspection programs, to ascertain adequacy of work completed prior to upgrade of the procedures. The licensee also performed technical re-review on a sample of work procedures for inactive and pre-



purchased contracts as a result of issues raised by an NRC management team in 1983. The procedure review and work reverification activities were monitored by an NRC Resident Inspector and Region V inspection staff between July 1980 and December 1983. The NRC staff finds that the licensee had implemented proper procedures for the QVP. These procedures were reviewed, approved, and monitored by Bechtel. The QVP accomplished its intended mission.

In June 1983, the CAT inspection examined various types of hardware at the site, including items subject to the reinspection program and the applicable procedures. The CAT found minor hardware discrepancies and raised questions related to procedure content and/or adherence. Licensee management promptly responded to these items and undertook their satisfactory resolution.

The inspection history shows that there have been individual problems with the production and use of procedures at WNP-2. With a project of this magnitude, omissions and errors cannot be precluded. Licensee management has been advised of procedural deficiencies and cases of failure to follow procedures, including the specific cases raised in the Petition. In each case, results of subsequent NRC inspections indicate that licensee management has been responsive, corrective action has been initiated, and the items have been satisfactorily resolved, including the CAT issues referred to by the Petitioner.

In discussing the procedures issue, the Petitioner claims that the Sandler Affidavit attached to the Petition demonstrates procedural deficiencies. The issues raised by the Sandler Affidavit had been examined prior to receipt of the Petition by the NRC and either found acceptable or satisfactorily resolved. The Sandler Affidavit is discussed in detail

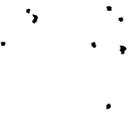
in Appendix A to this decision. The conclusion of the NRC staff is that all the issues raised by the Sandler Affidavit have been satisfactorily resolved.

E. Corrective Actions and As-Built Plant

The Petitioner contends that the NRC inspections to date demonstrate or strongly suggest that the licensee has not complied with the NRC quality assurance criteria for corrective action in that the licensee has not addressed the underlying programmatic causal factors of individual problems and has an inability to identify, analyze and ensure proper and timely completion of corrective actions. The Petitioner points specifically to continuing difficulties with the Bechtel as-built program^{9/} for examining pipe supports and restraints. Given the alleged inability of the licensee to take timely corrective action, it is not clear to the Petitioner why the NRC continued to rely on the good faith effort of the licensee.

The NRC staff has examined the examples presented in this section of the Petition and has determined that each one has been satisfactorily resolved. Based on NRC staff inspection experience, the licensee has routinely addressed causal factors leading to deficiencies in its actions to prevent recurrence and has repeatedly demonstrated the ability to take effective corrective actions. As a consequence, there is reasonable assurance that the plant has been constructed substantially in accordance with the conditions of the construction permit and NRC regulations. This

^{9/} The Bechtel as-built program was a 1982-1983 effort to identify differences between as-installed pipe supports and installation records. It encompassed the consideration of NRC Bulletin 79-14, regarding seismic analysis of pipe supports.



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has been confirmed by an examination of the as-built pipe supports and restraints, including the utilization of an independent third party to perform evaluations and independent calculations of a sample of these items. Corrective actions have generally been of sufficient timeliness.

In March 1983, an NRC special management team reviewed the status of implementation of the QVP commitments made to NRC by the licensee in July 1980. The team found ten areas where the licensee's interpretation or implementation of program commitments did not appear consistent with the NRC's initial understandings or expectations. Most of the NRC questions related to the scope or implementation of reviews of records and material supplied by inactive site contractors or off-site material suppliers. It is noted that the licensee had previously informed the NRC of changes in commitments prior to their implementation both by phone and in bi-monthly reports. However, the NRC staff did not specifically agree to these changes at the time. The licensee was cooperative in addressing the issues raised by the NRC, and implemented additional reviews and field inspection activities to satisfy the NRC staff that the reverification would be effective and adequately implemented.

The 1982 SALP Board recommended that additional effort appeared warranted to ensure implementation of corrective action decisions regarding significant construction deficiencies reported under 10 CFR 50.55(e). This was based upon inspection findings that the licensee had not instituted an effective tracking system for assuring that directives for corrective actions were in fact accomplished and accomplished satisfactorily. The 1983 SALP acknowledged licensee quality assurance actions, including adequate corporate audits to assure that all corrective actions were completed, but also noted the need for continued vigilance in verifying the adequacy and implementation of corrective actions.

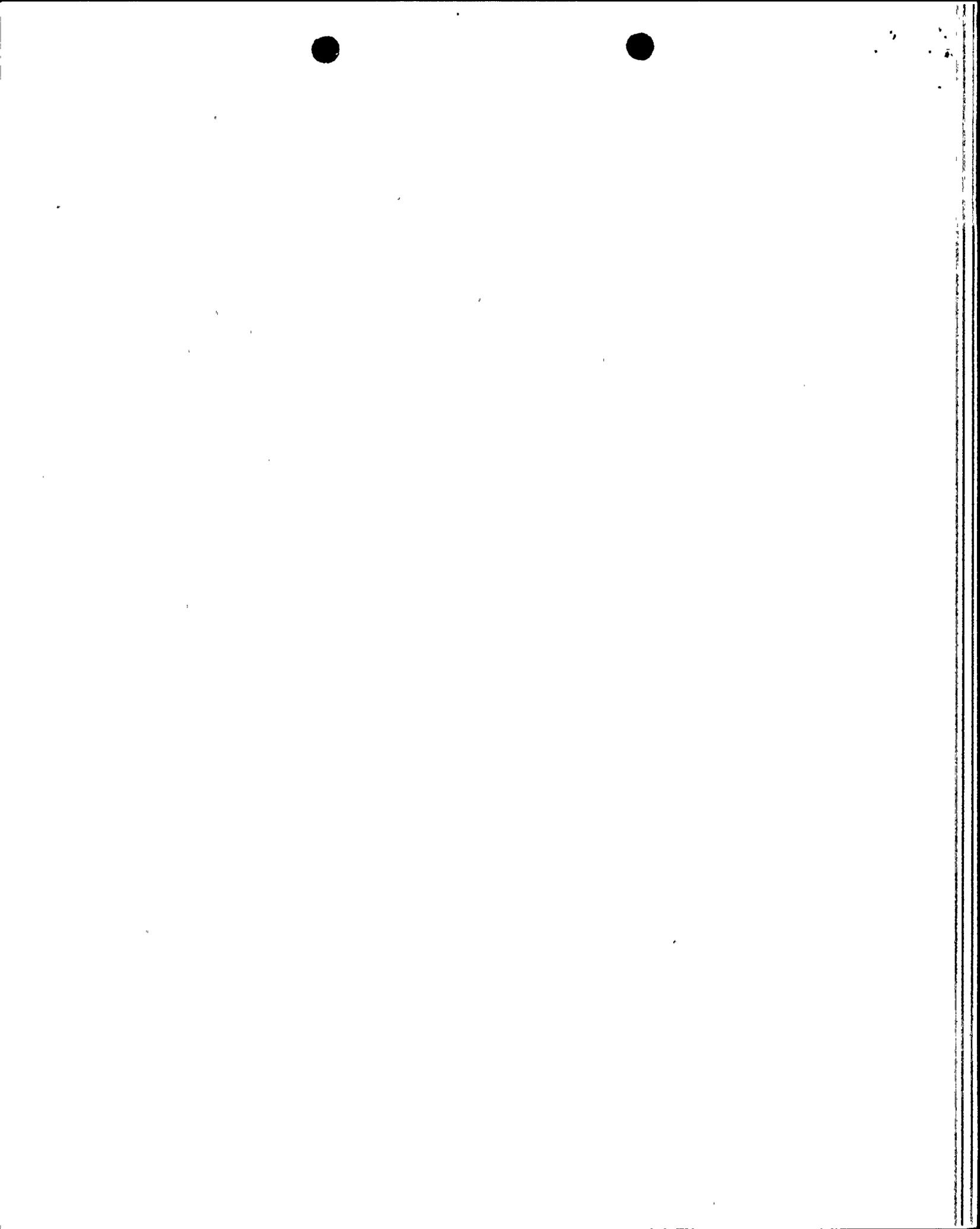


The CAT found that the Bechtel as-built program had not been totally effective in identifying hardware deficiencies. However, the CAT observed that the deficiencies found during the team's inspection of QC I piping and supports would probably not endanger system function. The licensee's actions on this matter included: (1) a sample reinspection performed by the WPPSS staff, including the CAT inspection sample, and evaluation of the findings; (2) a Burns and Roe evaluation of the Bechtel as-built program and discrepancies identified; and (3) Stone and Webster (third party architect-engineer) performance of independent field measurements and an assessment of design capability of a sample of pipe supports.

The engineering evaluations and assessments of worst case conditions performed by Burns and Roe and Stone and Webster concluded that none of the deviations impacted the design, function, or operability of the specific supports and that similar deviations in other supports would not significantly effect their structural integrity. The evaluations and assessments were reviewed by the NRC staff of the Office of Nuclear Reactor Regulation and they determined that none of the deviations had a significant effect on the structural integrity of the support. The NRC staff conclusions were documented in Supplements 4 and 5 to the SER for the WNP-2 facility.^{10/}

In summary, the NRC staff has considered the matters referenced in the Petition and has determined that these matters have been satisfactorily addressed or resolved.

^{10/} See footnote 6, supra.



F. Test and Startup

The Petitioner contends that the NRC inspection findings demonstrate that the startup organization at WNP-2 is unqualified and its activities reflect the same deviations from FSAR and Appendix B requirements as has the QA/QC program as a whole. The Petitioner references CAT findings that the startup organization has failed to develop adequate documentation to ensure that sufficient corrective actions were taken when deficiencies were identified.

The NRC Staff has examined the examples identified in the Petition and does not consider them significant. The NRC inspection findings referenced in the Petition, regarding test and startup activities were of minor significance and were adequately resolved by the licensee. The licensee revised the startup program to eliminate the deficiencies referenced by the Petitioner through establishment of separate functions, i.e., the startup personnel would perform those tasks for which they were specifically qualified and other construction and quality related inspections would be handled by others specifically trained and qualified in these areas.

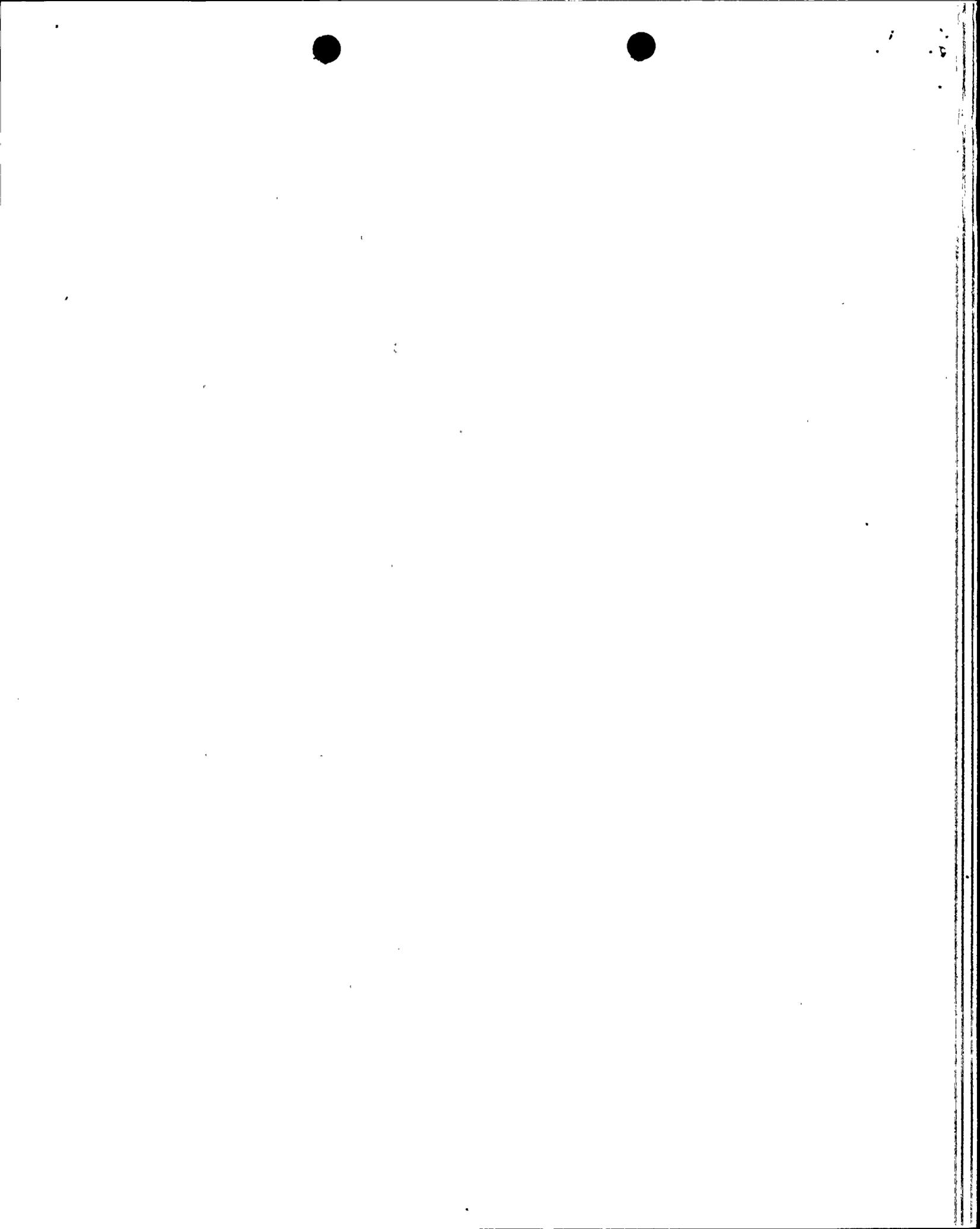
Startup activities are unlike construction activities in that they principally involve the conduct of operational type tests to determine if the equipment meets its design function. Findings are referred to other organizations for evaluation, repair, or modifications. The weaknesses that have been identified in the startup program are principally in the area of documentation and do not necessarily suggest inadequacies in the plant hardware.

The startup organization is different from the construction organization. Different individuals are involved and the staff is much smaller. Thus, there is insufficient basis for concluding that inadequate



performance of the construction organization is reflective of inadequate performance of the startup organization.

The CAT did observe that adequate documentary evidence of corrective actions could be provided for only 13 Inspection Reports (IRs) from a group of 56 reviewed. Each of these IRs was originated by a person within the electrical contractor organization to document what that person perceived to be departure from the electrical specifications. Although each such IR involved equipment which was no longer the responsibility of the electrical contractor, and no longer under his quality assurance program control, these IRs were offered to the licensee startup organization for consideration. Some of the discrepancies noted by these IRs were simply observations of conditions associated with in-process work being performed by the startup organization. The IRs were not a part of the startup organization's quality assurance program, and the startup engineers apparently ignored those which related to such in-process work. For other matters, the startup engineers translated the information on the IR into the rework or repair control document (Startup Deficiency Report) prescribed by the startup organization's quality assurance manual. The CAT considered that the IRs related to in-process work should have had some sort of documentation of the startup engineer's decision. However, the CAT did not identify any IR items which were actual deficiencies and which were overlooked by the startup organization. The licensee responded to the CAT concern by reexamining all such IRs that had not been dispositioned by the startup organization by instituting a procedure to document actions on such IRs in the future. These actions were subsequently reviewed by an NRC inspector and determined to be satisfactory.



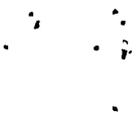
The startup organization at WNP-2 has performed satisfactorily. In those instances where deficiencies were identified, appropriate corrective actions were taken.

In summary, the NRC staff does not agree with the various conclusions reached by the Petitioner concerning the licensee's quality assurance program. The NRC staff has been fully aware of the items identified by the Petitioner; it was the NRC staff who identified and reported these items. It was also the NRC staff who tracked these items to completion to assure sufficient corrective action. For most of the cases, it was the NRC staff member who originally identified the item who was also involved in the assessment of the resolution of the issue involved. The NRC inspectors had access to all detailed records, personnel and physical hardware to aid in their assessments.

II. Failure to Meet General Design Criteria

A second issue in the Petition concerns conformance of the facility with 10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants". The Petitioner alleges nonconformance with a variety of the General Design Criteria in such areas as electrical circuits, structures, and fluid systems. The Petitioner alleges that these nonconformances make operation of the facility an unacceptable risk. The Petitioner further asserts the need for an Independent Design Verification Program (IDVP) to be completed prior to the licensing of operation of the WNP-2 facility. The staff has recognized the need for such a program at the WNP-2 facility and indeed such a program has been undertaken and completed by WPPSS.

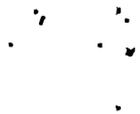
At the time of my December 20, 1983 letter to the Petitioner, the NRC staff's preliminary review of the IDVP had been completed. The NRC



staff had not completed its detailed review of the licensee's report and the Technical Audit Associate's reports of the IDVP effort. The Staff has now completed its review of these reports and has confirmed its conclusions that there are no indications of significant deficiencies in the WNP-2 design process. The IDVP that was conducted provides additional confidence that acceptable quality assurance design practices were followed at WNP-2 including the ability to correctly translate applicable NRC design criteria into plant design drawings and specifications.

With respect to the specific references in the Petition concerning areas where the General Design Criteria have allegedly not been met, specifically the electrical circuits, structures and fluid systems, the NRC, has been aware of each of the items of concern. As a routine NRC program function, the licensee's progress towards resolution of each item has been tracked by the NRC to ensure complete and acceptable corrective action. Some of these matters have been discussed above. For most of the specific items discussed in the Petition, the individual NRC staff member who originally identified the item was also involved in the assessment of the licensee's resolution of that issue. Consequently, the NRC staff is reasonably assured that each of the items referenced in the Petition, including those having to do specifically with WNP-2 plant electrical circuits, structures and fluid systems, have been resolved.

As stated in my letter to the Petitioner of December 20, 1983, the Office of Nuclear Reactor Regulation (NRR) has completed a thorough review of the WNP-2 facility, including its conformance to the General Design Criteria, and has concluded that the facility, as constructed, meets these criteria.



III. The Sandler Affidavit

A third issue raised by the Petition relates to allegations made by Mr. Stewart Sandler, in an affidavit attached to the Petition, concerning lack of quality construction and effective quality assurance at the WNP-2 site, principally in the area of welding. The Sandler Affidavit has been evaluated by the NRC Staff. This evaluation is attached as Appendix A. The results of the evaluation show that all issues raised by the affidavit have been satisfactorily resolved.

IV. WPPSS Management

The fourth issue raised by the Petitioner concerns the competence of WPPSS management to properly operate the WNP-2 facility. The Petitioner alleges that WPPSS management has failed to maintain an adequate quality assurance program to ensure that design and construction of WNP-2 has met applicable requirements. The Petitioner refers to a variety of sources including SALP and CAT findings as supporting the Coalition's position that the WPPSS management is not qualified to operate the WNP-2 facility.

Contrary to the above, the NRC staff has found that the licensee has been responsive to NRC concerns regarding management weaknesses, particularly since issuance of the Civil Penalty and 10 CFR 50.54(f) request in June 1980. Further, the NRC staff has reviewed the licensee's managerial qualifications during the operating license review and concluded that licensee management is qualified and competent to manage the WNP-2 facility for operations. Specific findings pertaining to the contentions raised in the Petition are discussed below.

Over the 1978 to 1980 time period, the NRC staff identified licensee management difficulties in obtaining effective implementation of quality assurance programs by the various site contractors. Inspection findings and management meetings resulted in various corrective actions during this period, and eventually led to the stop work decision by the licensee and definition of a site-wide corrective action program in July 1980. A new management team was brought in to supplement and/or replace those individuals who had been ineffective in controlling the project. Included in the program was the termination of some contractors. The licensee's management demonstrated a commitment to assess the adequacy of prior work and the work methods for future work. This included the introduction of significant personnel resources in the form of a restart task force in 1980 and a new construction completion and construction management contractor (Bechtel) in early 1981. The resources and experience of the Bechtel organization strengthened the management team and the corrective action programs coincident with completion of construction of the plant.

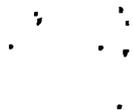
The NRC staff has reviewed the licensee's and Bechtel's efforts to assure that all quality deficiencies have been identified and addressed. In addition to programs of records reviews and hardware reinspections, program revisions were initiated to assure that discrepant conditions were documented for proper corrective action. The licensee's management also established a telephone hotline for employees to openly or anonymously report observed quality discrepancies. Also, employee exit-interviews included inquiries regarding knowledge of quality problems.



The licensee's independent consultant (TAA) took note of the current management's improved attitude towards quality in its September 1983 final report.^{11/} Acceptable cooperation of licensee management was also demonstrated during the NRC CAT inspection.

The Petitioner notes that in 1982, an NRC inspector was informed by the ASME authorized nuclear inspector (ANI) that Bechtel was not properly implementing its quality assurance program in several areas, including training of crafts, availability of work procedures, departures from work procedures, and insufficient material identification and segregation. The NRC in its review of this matter found that Bechtel construction management had requested the ANI to first address issues to management in meetings or by other informal means and then document his concerns if warranted. Such a request by Bechtel was questionable in the view of the NRC staff in that it could reduce the effectiveness of the quality assurance program. Corrective actions by Bechtel included resolution of the ASME and the NRC inspector's specific concerns and implementation of routine documentation by the Bechtel quality assurance department. Contrary to the allegation in the Petition that this item remains open, the item was closed in NRC Inspection Report 50-397/82-14.

^{11/} "An Independent Evaluation of The Quality Verification Program and Quality Control Effectiveness", Sept. 1983, Volume I, pg. 9.



The NRC staff considers that licensee and Bechtel management have now demonstrated a sense of responsibility for the establishment and implementation of the quality assurance program and associated compliance with NRC regulations.

The CAT did identify several issues related to management competence in its audit of the WNP-2 facility. NRC Region V issued a Notice of Violation on August 30, 1983 containing six items of noncompliance regarding these issues. Region V referred several of the items to the Office of Nuclear Reactor Regulation for evaluation to assure that corrective action had a sound technical basis. Both NRR and the Region V staff coordinated further reviews with the CAT staff. This included two followup inspections by CAT inspectors who had been involved in the original inspection. All of the CAT issues have been satisfactorily resolved. While the CAT perceived that identified hardware deficiencies required increased management attention to assure prompt satisfactory resolution, the CAT did not perceive these deficiencies to represent a pervasive management breakdown.

Finally, the technical and management competence of WPPSS to operate the WNP-2 facility has been reviewed by the NRC staff in accordance with the requirements of 10 CFR 50.40(b) and the Standard Review Plan (NUREG-0800), Section 13.1. The results are reported in the WNP-2 SER ^{12/} issued in March 1982. The organizational changes made by WPPSS have also been reviewed and are reported in Supplements Nos. 1 and 3 of the SER issued in August 1982 and May 1983 respectively. The NRC staff has concluded that the licensee has complied with all appropriate Commission

^{12/} See footnote 6, supra



requirements in the area of management competence and is qualified to operate the WNP-2 facility.

V. Conduct of NRC Personnel

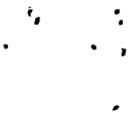
The fifth and final issue raised in the Petition questions the propriety of the conduct of NRC personnel in their review of matters related to the WNP-2 facility. Paragraphs 51, 71, and 94 of the Petition allege a lack of decisive actions on the part of Region V to ensure that WPPSS met commitments and regulatory requirements.^{13/} In Paragraph 95, the Petitioner alleges NRC "improprieties" including informal release of information to licensees and further alleges that the NRC Office of Inspection and Auditor (OIA) did not thoroughly investigate the "improprieties."

The Petition has been referred to the NRC's Office of Inspector and Auditor for review and consideration to determine whether any improper conduct occurred on the part of NRC personnel. The Office of Inspector and Auditor has reviewed the Petition and believes that no action by OIA in response to the Petition is warranted at this time.^{14/}

Based upon my review of the extensive inspection and enforcement effort conducted by Region V, and by the Office of Inspection and Enforcement, I am convinced that these efforts form an adequate basis upon which to make determinations regarding the possible existence of any health and safety concerns raised by the allegations as contained in the

^{13/} Paragraph 83 alleges that an inspection item concerning implementation of the WPPSS Quality Assurance Program has remained open for an extended period of time. This matter is discussed at p. 31, supra.

^{14/} OIA memo to Director, Office of Inspection and Enforcement, dated January 6, 1984.



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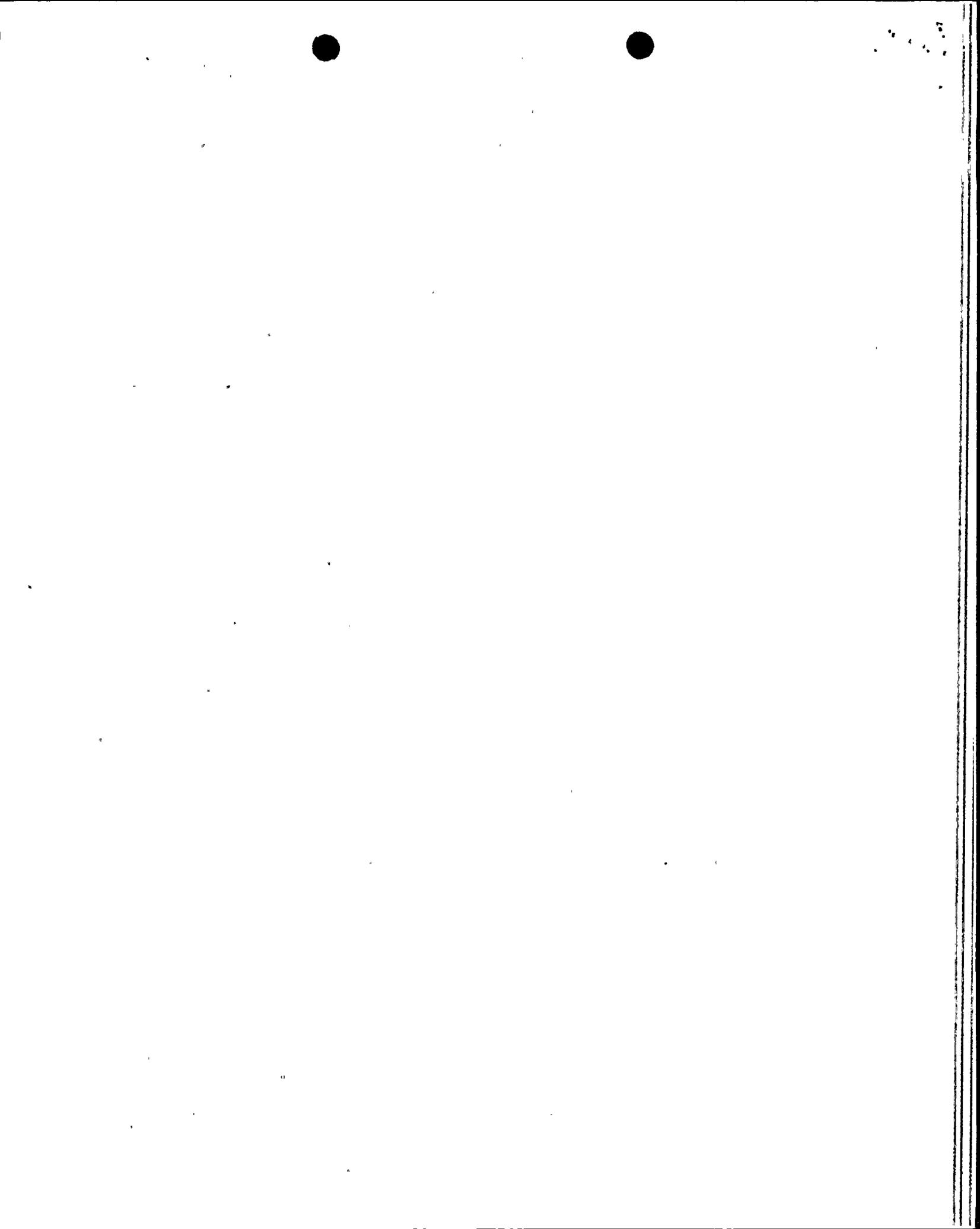
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Petition. While the Petitioner asserts that the CAT team findings show that Region V has not vigorously pursued its inspection and enforcement responsibilities, I find the opposite to be true. The CAT team's findings of no pervasive breakdown in the quality assurance activities at the WNP-2 facility confirm that Region V has been effective in overseeing the response of WPPSS to the earlier quality program breakdown to reduce construction errors to an acceptable level.

CONCLUSION

The Petitioner argues at length that the circumstances identified by the Petition warrant the exercise of this agency's discretion to issue to WPPSS an order pursuant to 10 CFR 2.202(a) to show cause why the construction permit for the WPPSS Nuclear Project No. 2 should not be revoked, a stay of construction imposed, the pending application for an operating license denied and a proceeding initiated before the Atomic Safety and Licensing Board.^{15/} An order to show cause is appropriate in those instances in which the NRC concludes, based upon alleged violations by the licensee or potentially hazardous conditions or other facts, that enforcement action should be taken but that a basis could reasonably exist for not taking the enforcement action proposed. See 10 CFR 2.202(a)(1) and the "General Policy and Procedures for NRC Enforcement Actions," 10 CFR Part 2, Appendix C, § IV. The information provided by the Petitioner is, in almost all instances, derived from the results of NRC inspection activities. The various deficiencies raised by the Petitioner, to the extent that they exist, have been satisfactorily addressed

^{15/} Given the issuance of an operating license to WPPSS for the WNP-2 facility, much of the relief sought by the Petitioner is moot. However, had the Petitioner identified deficiencies warranting action such as suspension, modification or revocation of the operating license, such actions would have been taken.



by WPPSS either through its response and corrective action to specific violations and in support of its application for an operating license. In those instances where allegedly new information has been provided by the Petitioner, e.g., the Sandler Affidavit, the NRC Staff had already been generally aware of those allegations, had examined them, and had found them to be without merit.

Sufficient grounds must be present for the NRC to institute a show cause proceeding. The Petitioner, as discussed above, fails to state a sufficient basis for the institution of show cause proceedings. The standard to be applied in determining whether to issue a show cause order is whether substantial health or safety issues have been raised.^{16/} In this instance, both the NRC inspection program and the licensing process has resulted in a careful review of the design and construction of the WPPSS facility. This process culminated in the completion of a satisfactory IDVP program at the WNP-2 facility. Given the substantial basis for a finding that the public health and safety will be reasonably assured following operation of the WNP-2 facility, I decline to institute a show cause proceeding.

Accordingly, Petitioner's request for action pursuant to 10 CFR 2.206 has been denied as described in this decision. As provided by 10 CFR 2.206(c), a copy of this decision will be filed with the Secretary for the Commission's review.


Richard C. DeYoung, Director
Office of Inspection and Enforcement

Dated at Bethesda, Maryland
this 19 day of March , 1984.

^{16/} Consolidated Edison Company of New York (Indian Point, Units 1, 2, and 3), CLI-75-8, 2 NRC 173, 176 (1975).



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APPENDIX A

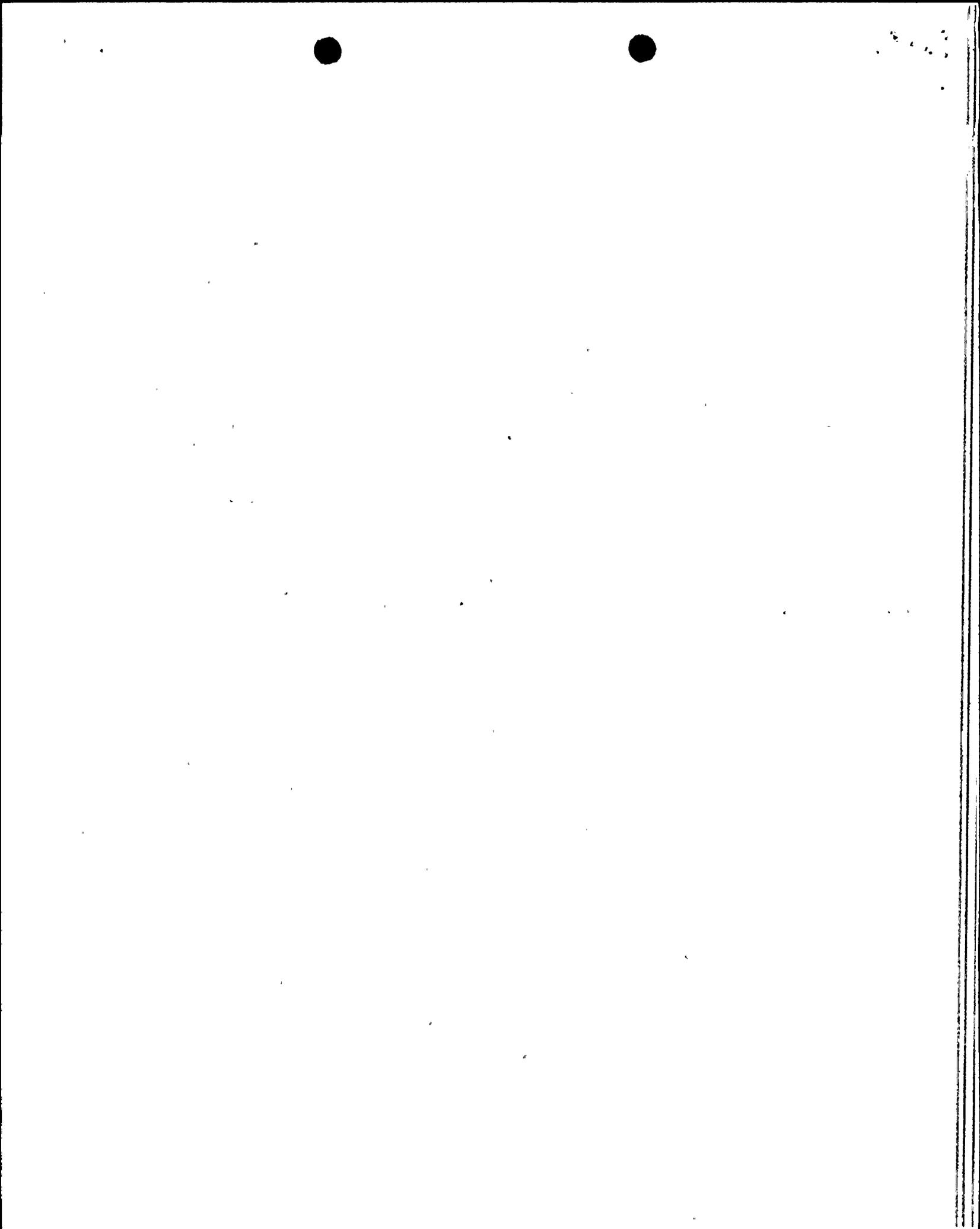
EVALUATION OF AFFIDAVIT OF STUART SANDLER
IN SUPPORT OF SHOW CAUSE PETITION OF COALITION FOR SAFE POWER

The NRC staff has evaluated the "Affidavit of Stuart Sandler In Support of Show Cause Petition of Coalition For Safe Power" (Sandler Affidavit). The allegations of the Sandler Affidavit and the NRC staff evaluation are set out below. The NRC quality assurance requirements pertaining to the Affidavit and final resolution of technical issues are described below.

A. The Sandler Affidavit alleges that quality assurance was not operating independently of engineering in its review of weld procedures at WNP-2. Specifically, it is alleged that:

- Weld procedure #84^{1/} was constantly being revised without any quality assurance review.
- Quality assurance comments or disapprovals which did not coincide with engineering decisions were simply ignored.
- Engineers developed repair procedures and made countless changes in the instructions for repair of individual welds without any consultation with quality assurance.

^{1/} The weld procedure in question has been determined to be WP-84 rather than WP-14 as noted in the Sandler Affidavit. WP-14 deals with the storage and maintenance of heat exchangers while WP-84 deals with the welding and repair for structural steel within the reactor containment drywell.



- NRC Resident Inspector stated that the American Welding Society (AWS) Code interpretation was an engineering function having nothing to do with quality assurance.

As stated in the Affidavit, the weld procedure in question was revised a number of times while the affiant worked at WNP-2. The NRC inspector's review shows that each of these revisions was reviewed and concurred in by the contractor's quality assurance and engineering staff prior to being submitted for review and approval by the construction manager, Burns and Roe. At Burns and Roe, copies of the revisions were routed to quality assurance for inclusion of quality related requirements, if appropriate. However, prior quality assurance approval was not mandated in all cases. Revisions to weld procedures are generally of a technical nature and do not involve any modification to the quality requirements. In such cases, copies of all revisions are routinely forwarded to quality assurance for their review after the fact. Revision 8 was a complete rewrite of the procedure. Due to the extensive nature of this revision, Burns and Roe quality assurance concurred in the specific approval of this revision. The NRC review shows that Burns and Roe quality assurance did concur in a number of the revisions. However, it cannot be established that they concurred in all revisions to the procedures since their concurrence was not mandatory. The NRC did not find any improprieties in the review and approval process for this particular procedure.

10 CFR Part 50, Appendix B, does require that quality control and quality assurance organizations should be generally independent of persons or activities they are inspecting or auditing. However, Appendix B does not require that a specific activity (such as technical review of welding



procedures) be performed by an independent quality assurance organization. The quality assurance organization is a usual party to review work procedures to assure incorporation of quality assurance requirements, such as hold points, calibration of instruments, documentation of inspection and test results, handling of nonconformances, provision for tagging and identifications, etc. It is not intended that this review be an engineering oriented, technical review. In accordance with section 5 of the AWS Code, ultimate responsibility for technical content of procedures resides with the engineering organization. This is particularly appropriate for weld procedures because the individual procedures for each process are technical with the quality control activities extracted and consolidated in generic instructions. For routine weld repair activities, engineering technical direction may not require quality assurance department review where the existing generic instructions incorporate the quality assurance inspection and documentation controls.

B. The Sandler Affidavit alleges that many quality assurance personnel have no formal engineering background, but are only high school graduates.

Educational requirements for inspection and auditing personnel have been specifically defined in NRC recognized standards, ANSI-N45.2 and N.45.2.6. These require high school education and work experience in quality assurance. Previous technical training is not mandated. The review of personnel qualifications shows that the contractor's and construction management personnel satisfied these requirements for their respective positions.



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C. The Sandler Affidavit alleges that numerous individuals at the WNP-2 site were called engineers but in fact had no formal engineering training. It is further alleged that the NRC Resident Inspector said that checking of engineering personnel on site was a problem as of November 1982.

There are no NRC requirements limiting the title which may be assigned to an individual. Engineering organizations typically contain a spectrum of individuals, from trainee through senior engineer. It is also true that a titled engineer may not be an engineering school graduate. This is particularly true for welding, where hands-on process experience is the principal criterion for an individual whose assignment is to work with welders to show them the best way to set-up a weld joint, or perform similar actions for complicated configurations. In mid-1980, the Burns and Roe Senior Welding Engineer discussed his management staffing policy with the NRC Resident Inspector, stating that he provides balance to his group with hardware-experienced persons and some trained metallurgists. He assumed the responsibility for matching staff assignments to staff abilities, and reviewing their work. This is a commonly accepted management practice.

The affiant did ask the NRC Resident Inspector if NRC ever looks at qualifications of engineers. The inspector responded that the NRC had raised questions regarding engineer qualifications in the past with the WNP-2 licensee, that the licensee had taken actions, and that there were some issues that had not yet been resolved. These issues related to an NRC Circular 80-22, dated October 2, 1980, Confirmation of Employee Qualifications, that had cautioned applicants and licensees about verifying



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resumes of job-shop engineers (short term contract personnel and individuals). This issue had been identified as requiring action by the licensee in NRC Inspection Report 81-01. Specifically, the licensee had not yet completed an evaluation for job-shop engineers and had not verified contractor programs/practices relative to personnel certification. At the time of the November 1982 discussion, the NRC had not yet inspected the licensee's final action on the open item, and thus could not make a positive statement to the affiant that the item was resolved. In December 1982, the NRC inspector did examine the status of this item and found that education and experience data for contract engineers, contractor direct hires and architect-engineer direct hires had been obtained and satisfactorily reviewed. The various organizations had programs in effect to verify employee resume data and to take actions regarding employees who have misrepresented themselves.

Additionally, the NRC had raised a general question of personnel qualifications for prior work in a June 17, 1980 letter to the licensee pursuant to 10 CFR Section 50.54(f). Some followup had been documented in NRC Inspection Reports 50-397/81-01, 81-08 and 81-10. However, at the time of the November 1982 conversation, the licensee's evaluations of past work had not yet been completed and NRC had not reached its conclusion on this matter. The affiant may have concluded that qualification problems did in fact exist in the past and still existed. The NRC staff has concluded that personnel qualifications were adequate.



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D. The Sandler Affidavit alleges lack of quality construction with respect to welding of the containment. Specifically, it is alleged that:

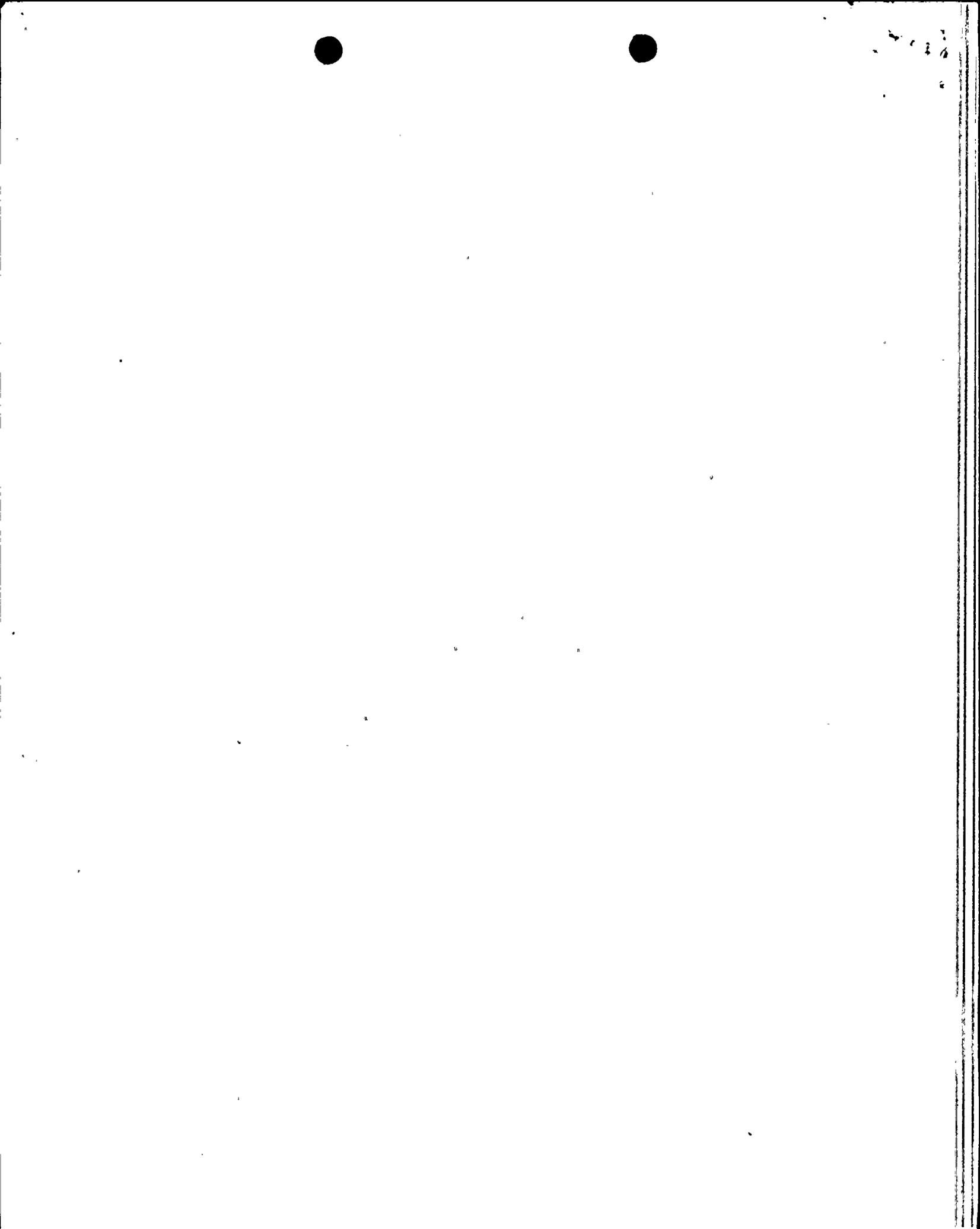
- welding of containment superstructure, including the fact that weld sequencing was not conducted as required by the American Welding Society (AWS) Code, and
- welding procedures previously used in the containment involved numerous violations of the AWS Code, and had been approved by an engineering group without formal educational welding background.

The contractor performing the welding identified the weld sequencing problem and the licensee reported it to NRC under the reporting requirements of 10 CFR 50.55(e) on December 1, 1977 as a significant construction deficiency. The licensee called upon the assistance of consultants to evaluate the problem and establish details of corrective action plans, including the technical content of repair procedures. The NRC evaluated the corrective actions. See NRC Inspection Report 50-397/77-07, Paragraph 11; Inspection Report 78-02, Paragraph 7; and Inspection Report 78-02, Paragraph 5. This has been resolved to the satisfaction of the NRC.

With respect to the welding procedures used in containment, following the default of the first welding contractor, the replacement contractor identified problems with the traceability of weld test records and the applicability of

generic weld tests and heat treatment procedures. A major effort was conducted to requalify the procedures used for welding. NRC inspectors evaluated the requalification effort, which included participation by the contractor, Burns and Roe, and the ASME Authorized Nuclear Inspector. This is described in NRC Inspection Report 50-397/79-14, Paragraph 3.g and Inspection Report 79-16, Paragraph 3.f. In July 1980, the licensee suspended all work at the project and initiated a review of all contractor procedures for safety-related work. The task force found discrepancies in revised procedures and challenged the prior procedures relative to possible impact on completed work. In late 1981, the welding contractor, under Bechtel management and direction, initiated a program to review all procurement and work records and implement corrective action to resolve apparent discrepancies or rework the hardware. In December 1982, the affiant, perhaps unaware of the satisfactory resolution of the problem, contacted the licensee and the NRC and again raised this procedure problem as an example of improper work. The NRC Resident Inspector conducted a re-review of the details of this matter and reaffirmed its adequate resolution. This is described in NRC Inspection Report 50-397/82-29 and Inspection Report 50-397/83-14. This item has been resolved to the satisfaction of the NRC.

The conclusion of the NRC staff is that all the issues raised by the Sandler Affidavit have been satisfactorily resolved.



NUCLEAR REGULATORY COMMISSION
[Docket No. 50-397]

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
(WPPSS Nuclear Project No. 2)

Issuance of Director's Decision Under 10 CFR 2.206

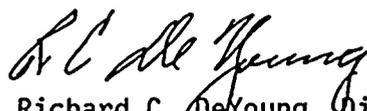
Notice is hereby given that the Director, Office of Inspection and Enforcement, has issued a decision concerning a petition dated October 14, 1983, filed by Eugene Rosolie, on behalf of the Coalition for Safe Power. The petitioner had requested that the Nuclear Regulatory Commission institute show cause proceedings to determine whether the construction permit for the Washington Public Power Supply System Nuclear Project No. 2 (WNP-2) should be revoked, a stay of construction imposed, the pending application for an operating license denied and hearings instituted. The Director, Office of Inspection and Enforcement, has decided to deny the petitioner's request.

The reasons for this decision are explained in a "Director's Decision under 10 CFR 2.206" (DD-84-7), which is available for public inspection in the Commission's public document room, 1717 H Street, N.W., Washington, DC, and in the local public document room for the WNP-2 facility, located at the Richland Public Library, Swift and Northgate Street, Richland, WA 99352.

A copy of the decision will be filed with the Secretary for Commission review in accordance with 10 CFR 2.206(c).

Dated at Bethesda, Maryland, this 19th day of March , 1984.

FOR THE NUCLEAR REGULATORY COMMISSION


Richard C. DeYoung, Director
Office of Inspection and Enforcement

