UNITED STATES
NUCLEAR REGULATORY COMMISSION

In the Matter of
ARKANSAS POWER & LIGHT COMPANY
Arkansas Nuclear One Units 1 and 2

Docket Nos. 50-313 and 50-368
License Nos. DPR-51 and NPF-6
EA 88-192

ORDER IMPOSING CIVIL MONETARY PENALTY

I

Arkansas Power & Light Company, Little Rock, Arkansas, is the holder of Operating License Nos. DPR-51 and NPF-6 issued by the Nuclear Regulatory Commission (NRC/Commission) on May 24, 1974 and September 1, 1978. The licenses authorize the licensee to operate Arkansas Nuclear One, Units 1 and 2, in accordance with the conditions specified therein.

II

A special inspection of the licensee's activities was conducted on July 14-18, 1986. The results of this inspection indicated that the licensee had not conducted its activities in full compliance with NRC requirements. A written Notice of Violation and Proposed Imposition of Civil Penalty (Notice) was served upon the licensee by letter dated April 24, 1989. The Notice stated the nature of the violation, the provision of the NRC's requirements that the licensee had violated, and the amount of the civil penalty proposed for the violation. The licensee responded to the Notice by letter dated June 22, 1989. In its response, AP&L admits that, applying present day perspective, certain documentation deficiencies existed in regard to the environmental qualification of the equipment that was the subject of the Notice. However, AP&L denies that the cited deficiencies constitute violations of 10 CFR 50.49. AP&L states that, even if it is assumed that the specified deficiencies constitute violations of 10 CFR 50.49, escalated enforcement action under the NRC's "Modified Enforcement Policy

Relating to 10 CFR 50.49" (Modified Enforcement Policy) is inappropriate. The licensee also provided, in a letter dated August 11, 1989, additional information concerning the number of systems and components affected by the deficiencies.

III

After consideration of the licensee's responses and the statements of fact, explanation, and argument for mitigation contained therein, the Deputy Executive Director for Nuclear Materials Safety, Safeguards and Operations Support has determined, as set forth in the Appendix to this Order, that the violations occurred as stated, that the violations were appropriately classified as a Category B problem under the Modified Enforcement Policy, and that the civil penalty imposed for the violations designated in the Notice of Violation and Proposed Imposition of Civil Penalty should be Fifty Thousand Dollars ($50,000). The civil penalty originally proposed was $75,000. However, the NRC reconsidered and is withdrawing the escalation of the proposed civil penalty for failure to take corrective action. Fifty Thousand Dollars is the minimum civil penalty for a Category B problem under the Modified Enforcement Policy and therefore that amount is being imposed.

IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay a civil penalty in the amount of $50,000 within 30 days of the date of this Order, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555.

V

The licensee may request a hearing within 30 days of the date of this Order. A request for a hearing should be clearly marked as a "Request for an Enforcement Hearing" and should be addressed to the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, D.C. 20555, with copies to the Assistant General Counsel for Hearings and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555, the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, and the NRC Resident Inspector at Arkansas Nuclear One.

If a hearing is requested, the Commission will issue an Order designating the time and place of the hearing. If the licensee fails to request a hearing within 30 days of the date of this Order, the provisions of this Order shall be effective without further proceedings. If payment has not been made by that time, the matter may be referred to the Attorney General for collection.

In the event the licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

(a) whether the licensee was in violation of the Commission's requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalty referenced in Section II above and,

(b) whether, on the basis of such violations, this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION

Hugh L. Thompson, Jr.
Deputy Executive Director for
Nuclear Materials Safety, Safeguards,
and Operations Support

Dated at Rockville, Maryland
this 17th day of April 1990

APPENDIX

EVALUATIONS AND CONCLUSIONS

On April 24, 1989, the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalty (Notice) to Arkansas Power & Light Company (AP&L) for deficiencies relating to the environmental qualification (EQ) of electrical equipment important to safety. On May 19, 1989, AP&L requested, and was granted, a 30 day extension to respond to the Notice. By letter dated June 22, 1989, AP&L responded to the Notice (Response). On August 11, 1989, the licensee provided additional information requested by the NRC staff after receipt of the June 22, 1989, submittal. The NRC staff's evaluations and conclusions regarding AP&L's response follow.

RESTATEMENT OF THE VIOLATION

10 CFR 50.49(f) requires that electric equipment important to safety be qualified by certain specified methods of testing identical or similar equipment under identical or similar postulated accident conditions with analysis to show that the equipment to be qualified is acceptable.

10 CFR 50.49(k) provides that licensees are not required to requalify electric equipment important to safety in accordance with 10 CFR 50.49 if the Commission has previously required qualification of the equipment in accordance with "Guidelines for Evaluating Environmental Qualification of Class 1E Electrical Equipment in Operating Reactors," November 1979 (DOR Guidelines). Such qualification was previously required by Commission Memorandum and Order CLI-80-21 on May 23, 1980.

Paragraph 5.2.2 of the DOR Guidelines states that a type test should only be considered valid for equipment identical in design and material construction to the test specimen unless deviations are evaluated as part of the qualification documentation.

Paragraph 5.2.6 of the DOR Guidelines states that equipment interfaces should be representative of the actual installation for the test to be considered conclusive, and as-built inspection in the field to verify that the equipment was installed as tested should be performed.

Contrary to the above, as of the date of the inspection, EQ files did not adequately document qualification of the numerous Limitorque motor operators (MOs) referenced in NRC Inspection Reports 50-313/86-23 and 50-368/86-24 because (1) the plant equipment was not identical in design and material construction to the qualification test specimen and deviations were not adequately evaluated as part of the qualification documentation, and (2) the licensee failed to verify that the equipment was installed as tested. As a result, for the Limitorque MOs identified, one or more of the following discrepancies was identified: (1) unqualified Scotch 22/23 tape slices to motor winding leads, a subcomponent to the MO, had not been identified; (2) unqualified terminal boards, a subcomponent to the MO, had not been identified; and (3) motor T-drains had not been installed as required.

SUMMARY OF LICENSEE'S RESPONSE

AP&L admits that, applying present day perspective, certain documentation deficiencies existed in regard to the environmental qualification of the equipment that was the subject of the Notice. However, AP&L denies that the cited deficiencies constitute violations of 10 CFR 50.49. AP&L states that even if it is assumed that the specified deficiencies constitute violations of 10 CFR 50.49, escalated enforcement action under the NRC's "Modified Enforcement Policy Relating to 10 CFR 50.49" (Modified Enforcement Policy) is inappropriate.

AP&L supports its position with the following arguments:

1. Contrary to its normal Enforcement Policy, the NRC failed to adequately consider the actual safety significance of the alleged violations. AP&L stated that it is inappropriate to equate documentation deficiencies with actual equipment qualification deficiencies. Based on the lack of actual safety significance, AP&L contends, it would be more appropriate for NRC to have considered these deficiencies as violations not sufficiently significant to warrant consideration of a civil penalty. Further, the licensee argues that it is inappropriate for the NRC staff to take a civil penalty action solely based on a licensee's misreading of the NRC staff's intent with respect to equipment walkdowns.

2. AP&L contends that the NRC improperly classified the deficiencies as a Category B violation. AP&L contends that these deficiencies are more appropriately classified as Severity Level IV or V violations under the NRC's normal Enforcement Policy. Alternately, AP&L contends, these deficiencies should be considered as no more than a Category C violation under the Modified Enforcement Policy.

3. In regard to the specific deficiencies in the Notice involving tape splices and terminal blocks, AP&L contends that the "clearly should have known" threshold has not been reached. AP&L asserts that the NRC had given tacit approval to industry practices prior to the November 30, 1985 deadline with respect to inspection of the internals of Limitorque motor operators.

4. In regard to the specific deficiency in the Notice involving T-drains, AP&L denies that this constitutes a violation of 10 CFR 50.49. AP&L states that it analyzed this condition (motor operators without T-drains) and concluded in 1984, prior to the deadline for qualifying equipment, that T-drain installation was not necessary to satisfy 10 CFR 50.49 with respect to the valve motor operators in question. If the NRC concludes that the absence of T-drains was a violation of 10 CFR 50.49, AP&L argues that the "clearly should have known" threshold was not reached.

5. AP&L argues that, even if violations are assumed to have occurred, full mitigation of the proposed civil penalty is warranted based on a fair application of the factors specified in the NRC's Modified Enforcement Policy. AP&L contends that the NRC failed, in its proposed civil penalty, to give adequate consideration to AP&L's efforts to comply with 10 CFR 50.49 prior to the November 30, 1985 deadline, and failed to give adequate consideration to AP&L's corrective actions. In addition, AP&L argues that

the three cited deficiencies represent isolated violations affecting a limited number of components. Accordingly, AP&L argues, NRC should mitigate the proposed penalty in its entirety in conformance with its Modified Enforcement Policy.

6. Finally, AP&L argues that NRC's proposed action is inconsistent with NRC's handling of similar issues at other licensed facilities.

NRC EVALUATION OF LICENSEE'S RESPONSE

The NRC staff's evaluation of the licensee's arguments follows. The licensee's arguments are addressed in the same order as discussed above.

1. SAFETY SIGNIFICANCE

The licensee states that the NRC has an obligation to categorize violations by severity levels based on safety significance and that this obligation was recognized by the Commission in promulgating the General Enforcement Policy (10 CFR Part 2, Appendix C). AP&L believes that this premise also applies equally to the Modified Enforcement Policy of GL 88-07. The licensee states that it is inappropriate to simply equate documentation deficiencies with actual qualification deficiencies and to apply a severity test limited to the "number of systems" affected. The licensee continues by contending that safety significance must be considered under GL 88-07. After considering GL 88-07, AP&L argues that these deficiencies should be treated as file discrepancies only.

The Commission, in promulgating 10 CFR 50.49, determined that a licensee's failure to demonstrate the environmental qualification of electrical equipment important to safety was a significant safety matter. A licensee's failure to qualify such equipment showed the licensee's lack of knowledge concerning the qualification of the equipment and, accordingly, showed that the licensee could not demonstrate the correctness of its bases for assessing plant safety. In the area of environmental qualification, a licensee's lack of knowledge of whether equipment important to safety is capable of operating in a harsh environment indicates that the licensee cannot predict whether such equipment would operate in the event of an accident in which it is called upon to perform its intended safety function. Accordingly, a licensee who lacks such knowledge cannot assure protection of the public health and safety in the event of an accident.

The environmental qualification regulations require licensees to qualify each item of electrical equipment important to safety. The regulations require each licensee to list each item of electrical equipment important to safety on a master list. All such listed items, by definition, perform important safety functions. Thus, safety significance is inherent with respect to each item on the list. As described above, the licensee's knowledge of whether such equipment is qualified is significant for protecting public health and safety. Accordingly, the Commission, as a matter of policy, decided to treat each unqualified item as equally significant

to safety. As explained in the Modified Enforcement Policy, the Commission has aggregated individual violations of 10 CFR 50.49 to determine the pervasiveness of the qualification problem represented by those individual violations in order to assess civil penalties. The Commission developed Categories A, B, and C based on the pervasiveness of the violations which reflect the relative significance of the collective violations. Isolated individual violations are based upon the fact that a licensee could not assure the operation during an accident of a limited number of systems affected by the isolated individual violations. Because a small number of safety systems or components could fail during an accident as a result, the Commission classified such violations as Category C. If the violations affect a moderate number of systems, the violations would be more significant than those in Category C because the licensee would not know whether a correspondingly greater number of systems would operate in the event of an accident. Accordingly, the probability that an accident could endanger public health an safety would be increased. The Commission classified such violations in Category B. Finally, pervasive problems would be the most significant because the licensee's lack of knowledge of equipment quality would extend to many systems and result in the licensee being unable to assure that these systems would perform their intended functions in an accident. These would be classified as Category A violations. This method, therefore, does provide a measure of the safety significance of environmental qualification violations.

The licensee states that the Notice cited only documentation discrepancies for unqualified Scotch 22/33 tape splices to motor winding leads, unqualified terminal blocks, and T-drains missing from the motor housing on Limitorque motor operated valves (MOVs) (items identified by AP&L during its Limitorque upgrade program). It should be noted that the licensee claims that each of these examples are only subcomponents of the qualified MOVs. The Notice addresses not only the documentation deficiencies, but also the fact that the MOVs were installed in a configuration not qualified by a test report. This is a hardware problem, not just a documentation problem.

The Modified Enforcement Policy does provide for categorizing certain violations at Severity Level IV or V. The intent of this provision was to prevent calling EQ violations significant if information which demonstrated the equipment to be qualified was readily available or accessible. Minor file deficiencies, which are resolved by adding references or the insertion of pertinent documents in the file, or deficiencies involving equipment known by the NRC staff to be qualified, are intended to be Severity Level IV or V violations, regardless of who found them. On the other hand, violations involving greater effort to prove qualification, such as significant analysis, testing, or extended efforts to produce or find the necessary information, may be considered significant violations and therefore considered for a possible civil penalty. The NRC staff considered this when evaluating the significance of the proposed violations. In summary, the NRC staff views the EQ deficiencies at ANO to be significant. In making that determination, it is irrelevant that the licensee may have misread the NRC staff's intent with respect to the single issue of walkdown as asserted by AP&L.

2. CATEGORIZATION OF THE VIOLATIONS

The licensee's general argument concerning classification of the violations based on safety significance is discussed above. Additional discussion of the merits of elements of the violations is provided in Paragraphs 3 and 4. The revised number of items and systems involved, as indicated in the licensee's August 11, 1989 letter, does not alter the NRC staff's conclusion that the categorization of the violations should be Category B. The violations, by the licensee's own tabulation, affected six systems and approximately three dozen components, which represent more than an isolated problem. Review of other actions taken by the NRC staff under the Modified Enforcement Policy finds the categorization of this action is consistent with that of other actions involving similar issues and similar numbers of systems and components.

3. TAPE SPLICES AND TERMINAL BLOCKS

A. Tape Splices

The NRC staff's Notice incorrectly cited the licensee for the use of Scotch 22/23 tapes in electrical splices instead of the types of tape actually employed which were Scotch 22/33. Based on its response, the licensee apparently recognized this as an inadvertent error which did not change the Notice in a substantive manner. However, in order to correct that error, it should be recognized that, where Scotch 23 tape is specifically identified, Scotch 33 tape is the material of concern. Furthermore, general references to tape used in electrical splices found in the Notice, its cover letter and this Appendix, are intended to describe Scotch 22/33 types of tape, both of which the NRC maintains were unqualified in the installed configurations.

The tape splices are interfacing components between the vendor-supplied motor operators and the system in which they are installed. The tape splices were not the responsibility of the equipment vendor, but of the licensee, as they were put in after installation of the motor operators in the plant. As either the licensee or its contractor had to have subsequently installed these splices, they could not rely on earlier vendor documentation to demonstrate qualification. Further, the installation of these connections should have been made in accordance with approved procedures and in qualified configurations. Such activities were required to be documented and such documentation would have provided the licensee a record of inspection and assurance of qualification. Absent documentation supporting the qualification of the licensee's own splices, the licensee clearly should have questioned how interfaces between vendor-supplied equipment and the plant electrical system had been made. The raising of such questions would then have led to verification of proper documentation or verification of the installed configuration. Therefore, with or without specific notice from the NRC staff, the licensee should have done internal splice inspections, absent detailed qualification documentation.

The licensee's arguments that the tape splices were qualified are without merit. The tape splices are quite dissimilar to the molded plastic and metal wire caps for which the licensee attempts a similarity-based qualification argument. Qualification cannot be based on the unsupported logic that the tape splices provide superior mechanical protection compared with the wire caps, and that no moisture barrier is necessary because the wire caps appear to provide none. Additionally, the configuration of the wire caps cannot be established; therefore, the assumption that no moisture intrusion protection was present cannot be substantiated. Post-discovery unsupported engineering judgment of this sort by the licensee and a consultant does not satisfy 10 CFR 50.49 requirements that the licensee have documentation available to support equipment qualification.

The NRC staff notes that the Thomas and Betts wire caps referred to in this regard were subsequently tested by Wyle Laboratories for another licensee. A plant-specific qualified life of only about eight years for a BWR LOCA with no chemical spray was reported in Information Notice 88-81 and such a qualification finding clearly is not acceptable at ANO with its PWR LOCA profile and its use of chemical spray. This finding underscores one of the reasons that unsupported engineering judgments are not acceptable as a basis for qualification. Detailed plant-specific documentation is required.

Testing of the tape splices after their discovery is not sufficient to avoid escalated enforcement. Documentation for the qualification of the tape splices did not exist on November 30, 1985. In fact, the qualification status of these tape splices was uncertain and required additional testing, inspections, and analysis in an attempt to qualify the tape splices. Because 10 CFR 50.49 required splices to be on the master list and qualification to be demonstrated by testing and necessary similarity analysis, the licensee clearly was in violation of 10 CFR 50.49(d), (f), and (j) at the time of the finding. Notwithstanding the statements made by a representative of Wyle Laboratories, the NRC staff concludes that classification of this item as significant is warranted. The conclusions reached by the Wyle representative were based on an "informal examination" of the splices which does not constitute the testing and analysis required by 10 CFR 50.49 to demonstrate qualification. Further, the examination was performed after the EQ deadline and the NRC inspection. Additionally, the representative's opinion that, based on previous testing, "the splices were capable of passing a qualification test for the relevant function application" was unsupported in that, similarity between the tested splices and installed splices was not established. Finally, though not specifically stated by the licensee or the Wyle representative, the testing relied upon, to form the above opinion, was also apparently performed after the EQ deadline. Therefore, even putting aside the NRC staff's other concerns, the testing could not be used to demonstrate splice qualification as of November 30, 1985.

B. Terminal Blocks

The licensee made a number of specific arguments to support its position that the "clearly should have known" test was not met as to the unqualified terminal blocks inside of Limitorque motor operators. With regard to the necessity for the performance of internal inspection of the motor operators, the licensee argued, in part, that it could not have known the NRC staff required such activities because the NRC staff did not even require such a level of inspection by its own inspectors as evidenced by the inspection guidance contained in TI 2515/76 dated March 27, 1986. The NRC staff agrees that TI 2515/76 did not explicitly require such inspections. The inspection guidance was not written to be all encompassing. Rather, it was written to address what at the time were thought to be the likely problem areas in meeting the 10 CFR 50.49 requirements. As it turns out, verification of internal components for motor operators was a more significant issue than anticipated by the guidance. Neither the fact that the problem was more significant than anticipated nor the fact it was not specifically referenced in the inspection guidance demonstrate that the NRC staff accepted prior to November 30, 1985 that this issue did not have to be addressed by licensees. In fact, Franklin Research Center (FRC) Technical Evaluation Report (TER) "Implementation Guidance for New and Corrective Equipment Environmental Qualification" dated April 23, 1983, which is referenced by TI-2515/76 and FRC Report No. 5896-005-2 dated May 1985, which was also relied upon by the NRC staff in preparing for 10 CFR 50.49 inspections, both recognize that internal inspections may be necessary to verify the overall qualification of components such as motor operators.

AP&L also argued that NRC generic correspondence such as IN 83-72 and IN 86-03 did not provide sufficient information to conclude that AP&L or any other licensee clearly should have know of unqualified terminal blocks and tape splices in Limitorque motor operators.

With regard to the applicability of NRC generic correspondence in determining that AP&L clearly should have known of the unqualified components in the Limitorque motor operators, the NRC staff concludes that the licensee has, in part, misunderstood the NRC staff's position. The NRC staff, as discussed in the Notice, based its "clearly should have known" finding on the necessity to perform walkdowns absent adequate documentation of qualification as discussed above and in NRC generic correspondence such as the DOR Guidelines and IN 83-72. IN 86-03 had no part in the NRC staff's "clearly should have known" decision because it was issued after the deadline. The discussion of IN 86-03 is included in the cover letter of the Notice in the context of corrective actions taken by AP&L which are discussed in Paragraph 6 of this Appendix.

With respect to the licensee's arguments regarding when walkdowns should include individual component disassembly, the NRC staff's position in this regard has not changed. It has always been required that the installed configuration must represent the tested configuration. NRC Information Notice 83-72 provides examples where

components (terminal blocks, wiring, etc.) internal to a Limitorque valve operator were found to be unqualified for the anticipated service condition. The NRC staff agrees with AP&L that it has never been required that a licensee perform inspections of every component in every vendor-supplied assembly. However, the NRC staff did expect that a certain number of assemblies would be inspected as part of the EQ walkdowns. The scope of such inspections would be determined by the quality of the qualification record available. Clearly in this case, the qualification record for motor operators was not outstanding or complete enough to warrant total reliance upon it without field verification.

Had such inspections been properly performed and had the information in the NRC's generic issuances, such as IN 83-72, been properly utilized to determine the types of components of particular concern, the licensee would have clearly found these unqualified components. The position the licensee has taken relative to the information that was provided in IN 83-72 is overly narrow. The important issue raised by the IN was the general one of unqualified components being found in equipment previously thought to be qualified.

With respect to the licensee's argument that it responded responsibly to IN 83-72, based on previous actions it took in identifying unqualified or unidentified terminal blocks, the NRC staff is not persuaded. First, the licensee discusses only in general terms the actions it took in response to various communications with Limitorque prior to the issuance of IN 83-72. Such general statements do not provide the NRC staff with enough information to judge the reasonableness of AP&L actions. Second, and more importantly, the licensee's actions, however extensive, were in response to issues raised by Limitorque, the motor operator vendor. Clearly, IN 83-72 alerted licensees to the fact that vendor documentation alone did not provide reasonable assurance of qualification. Therefore, failing to take further action regarding IN 83-72 based solely on communications with the vendor is not a reasonable position.

The NRC staff has reviewed the letter Limitorque Corporation issued in response to IN 83-72 relied upon, in part, by the licensee and found that the conclusion reached by Limitorque in the last paragraph of the letter, that licensees need take no action with respect to IN 83-72, is not supported by the body of the letter. The NRC staff rejects the letter as the basis for a licensee not pursuing the issues raised in the IN and finds that the letter in its totality is consistent with the NRC staff's "clearly should have known" finding. Consistent with that point, the NRC found that a number of licensees had acted upon the IN after reviewing the Limitorque letter.

The NRC staff was concerned that the Limitorque letter started out describing an isolated problem with terminal blocks at the Midland site and then abruptly went into discussing the generic use of Buchanan 0824 terminal blocks in Westinghouse supplied equipment. The discussion of the Buchanan terminal blocks in Westinghouse equipment is, in the staff's view, significant for both plants with

such equipment and those without it. Most importantly, the Midland facility did not have Westinghouse supplied equipment, yet Limitorque chose to discuss this issue among a number of seemingly Midland specific issues. It is clear that the Buchanan terminal block information along with other discussion supplied in the letter about the Midland specific problems should have alerted licensees to the potential for environmental qualification deficiencies as the result of work performed not only by the vendor (Limitorque) but that performed by the nuclear steam supply system provider or the architect engineer. Therefore, it is clear that assurances from the vendor may not provide a sufficient basis for concluding that no problem existed with motor operators because changes to the motor operators may have been required or made by other organizations.

The letter then shifts back to problems characterized as Midland specific including a discussion of unidentifiable terminal blocks. That discussion in the Limitorque letter (#9 of the numbered items) does not provide adequate information to allow a knowledgeable reader to fully understand the situation including whether it was truly only a Midland problem. First, given that the Limitorque qualification tests for motor operators used only certain types of terminal blocks, the letter did not provide a basis for assuring customers that these or other types of unidentifiable terminal blocks did not exist in motor operators at other plants. Second, the letter states that the unidentifiable terminal blocks were used in low voltage control circuits and were identified and found "suitable" for their application. The letter does not answer such questions as whether the terminal blocks were ultimately identified to be of the types that had previously been used in testing, whether they were "suitable" in all possible control circuit applications at Midland as well as at other plants, and if not of a type previously tested, how the suitability discussed in the letter equated to the record of qualification required by 10 CFR 50.49.

The licensee acknowledges in its Response (See page 8 of the licensee's 10 CFR 2.201 response) that the terminal blocks were likely installed by someone other than Limitorque. However, it is AP&L's position that such a conclusion could not have been reasonably reached based on information available prior the EQ deadline. The NRC staff does not agree with the licensee's conclusion. The NRC staff concludes that the licensee clearly should have known of the terminal block deficiencies prior to November 30, 1985. Had the licensee critically reviewed IN 83-72 and Limitorque's letter responding to it, the licensee should have discovered the deficiencies at issue prior to the November 30, 1985 deadline.

The licensee claims that only four terminal blocks were unidentified at the time of the EQ inspections, and therefore, there was no safety significance. The licensee cites additional testing that was performed to show that the terminal blocks were qualified. The NRC staff

concludes that, as discussed above regarding the tape splices and in Paragraph 1 for the general case, this is a significant deficiency. The licensee, at the time of the inspection, did not have documentation in its EQ files which would support the qualification of the terminal blocks and had to correct more than a minor file deficiency in an attempt to demonstrate qualification. Therefore, the violation is significant and stands as stated.

4. T-DRAINS FOR LIMITORQUE MOVs

AP&L denies that the cited missing T-drains constitute a violation of 10 CFR 50.49. The licensee claims that an analysis was performed and the conclusion reached in 1984 was that the installation of T-drains was not an issue. The licensee cites Limitorque test reports for inside containment that qualified actuators without T-drains. AP&L argues that it further confirmed this position through contacts with an EQ consultant. The licensee also claims that it relied on engineering judgment to conclude that T-drains were not required. AP&L contends that missing T-drains is thus not a qualification issue.

Although the licensee claims to have documented, prior to November 30, 1985, a 1984 conclusion that T-drains are not required for in-containment qualification of Limitorque operators, the NRC inspectors informed the licensee during the July 1986 inspection that the documentation to support this conclusion was not adequate and that T-drains were required. Both the environmental conditions and the motors differed significantly between the Limitorque motor operators tested without T-drains and those installed at ANO, and no evaluation of those differences has been documented. For example, motor configuration and insulation material differences were not addressed, nor was the lack of a post-LOCA cooldown and condensation period in one of the tests relied upon by the licensee. Thus, the licensee failed to document an acceptable analysis to supplement the test reports in order to use them to demonstrate qualification of the motor operators in the applications found at ANO.

Statements of qualification made by Limitorque were without an adequate technical basis, and do not provide acceptable documentation of qualification. Further, based on a statement made on page 10 of the licensee's 10 CFR 2.201 Response, it appears that Limitorque's statement of qualification was not as unqualified as stated by the licensee. The phrase "if conditions are bounded by tests without them (T-drains)" is important and as discussed above it is the NRC staff's position that tests without T-drains do not bound the conditions at ANO.

The NRC staff has reviewed the April 3, 1985 letter the licensee received from Schneider Consulting Engineers (SCE) concerning motor operator qualification without T-drains, as well as the memoranda attached to that letter. The letter itself provides no technical basis to support the conclusions reached. Both the licensee and its contractor clearly should have recognized that statements not supported by testing and the necessary analysis do not constitute the qualification record required by 10 CFR 50.49. The consultant's submittal fails to provide any basis to support the similarity between the motor operators in use at ANO to those tested

without T-drains. Further, the consultant fails to analyze differences between the environments used during testing of the motor operators without T-drains and the postulated accident environment of the ANO containment in order to establish the similarity of environments.

The memoranda attached to the SCE letter also fails to provide any information that could be used to demonstrate qualification. In fact, the memorandum documenting a conversation with a Mr. Drab of Limitorque Corporation provides what could be considered a caution about making qualification determinations based on existing Limitorque test results. Mr. Drab apparently did not accept the SCE position and, while he also apparently did not reject it, he did make it clear that conclusions concerning the acceptability of using motor operators without T-drains were solely the user's responsibility. The memorandum documenting the conversation with Mr. N. B. Le of the NRC staff cannot be read to give his, let alone the NRC staff's, unqualified approval of the SCE position. The memorandum states that the author told Mr. Le that testing of actuators with pipe plugs (without T-drains) and with T-drains both had successful/acceptable results and that he considered either arrangement qualified. Mr. Le's subsequent agreement with the author's conclusion clearly assumed the accuracy of the author's assertion of qualification. Mr. Le's recollection of the documented conversation is consistent with the above position. He recalls that he agreed with the author that, if SCE had a basis to qualify the motor operators without T-drains then, the issue at Zion was solely one of procedural compliance and not motor operator qualification. The NRC staff views any assumption on the author's part that Mr. Le accepted his qualification argument based on the telephone call as unreasonable because neither Mr. Le nor any member of the NRC staff had an opportunity to review the documentation supporting such an argument.

With respect to the licensee's argument that it relied on engineering judgment, the NRC staff has in the past and continues to find it acceptable when used as part of a documented engineering analysis. In this case, the licensee did not document the engineering judgments made or the bases for those judgments. A record of qualification should be sufficiently detailed such that an individual knowledgeable in equipment qualification issues would be able to review and understand the basis for the determination that a component is qualified. The record need not contain the answers to every conceivable question. Rather, the record should contain clear and logical information which demonstrates qualification. The adequacy of information contained in the qualification file can only be determined on a case-by-case basis. Undocumented engineering judgment does not provide a complete auditable record nor can it be independently scrutinized. Undocumented engineering judgment creates a void in that a licensee will not know the basis upon which a component was determined to be qualified. Such an approach can lead to significant problems over the life of a plant. The basis and details of the judgment could be redefined by each individual who may attempt to reconstruct the rationale concerning qualification. Consequently, undocumented engineering judgment has been and continues to be of no significant value for the purpose of demonstrating compliance with the EQ rule.

The NRC staff continues to be of the view that the missing T-drains at issue constitute a violation of 10 CFR 50.49. The licensee's arguments to the contrary are not persuasive. Additionally, the NRC staff's position that items such as missing T-drains are safety significant has been discussed earlier in this Appendix.

With respect to the licensee's arguments that the "clearly should have known" test was not met, Limitorque report B0058 requires T-drains for in-containment qualification, and the 1984 Limitorque letter addressing IN 83-72 states that "Qualified Limitorque RH motors require the installation of motor "T" drains in the two lowest drain plug locations." The installation position of the valve/actuator assembly is not known at the time the actuator is shipped from Limitorque. Consequently, the motor "T" drains are placed in the limit switch compartment with installation instructions at the time of actuator shipment. Since the licensee has admitted knowledge of the T-drain concern prior to November 30, 1985, and since there was indeed some written material from Limitorque (including instructions shipped inside the operators) indicating that T-drains could be required for qualification, a more thorough evaluation was appropriate. Examination of available test reports clearly would have shown no adequate qualification test for an operator with class RH motor insulation and no T-drains. Because of this information, plant-specific analyses to determine the applicability of existing reports to the licensee's plants should have been initiated. This was not done. Rather, the licensee chose to rely on undocumented engineering judgment and a consultant's opinion of uncertain bases. These circumstances satisfy the "clearly should have known" test.

5. MITIGATION OF THE CIVIL PENALTY

With respect to the licensee's best efforts, the NRC staff maintains that, while overall best efforts were made by the licensee, significant deficiencies affecting six systems and three dozen components in a single category of components justify the application of only partial mitigation under this factor. Comparison of the application of this factor in this case with its application in previous enforcement actions under the Modified Enforcement Policy finds this application consistent with the past actions. Full mitigation under this factor has only been applied in other Category B actions in which a single qualification problem affecting a moderate number of components was found. In this case, three separate qualification problems were discovered (splices, terminal blocks and T-drains) indicating more than an isolated error in accounting for environmental qualification of equipment.

After reconsidering the licensee's corrective actions in this case, the NRC staff concludes that escalation of the civil penalty under this factor was not warranted. However, the NRC staff does not agree with the licensee that mitigation under this factor is warranted. The licensee should have more promptly identified the deficiencies cited in the Notice by acting more quickly with respect to IN 86-03 which necessitated, even by the licensee's admission, inspecting the motor operator internals. Had the

licensee acted in January 1986 rather than delaying until July 1986 to assess the qualification status of the motor operators in ANO Unit 1, which was at power, mitigation under this factor would have been considered.

In summary, the NRC staff rejects the licensee's arguments with respect to best efforts but concludes that neither escalation nor mitigation for corrective actions is appropriate.

6. INCONSISTENCIES IN THE APPLICATION OF THE MODIFIED ENFORCEMENT POLICY

The NRC staff has reviewed the enforcement actions which the licensee contends support its position that the Modified Enforcement Policy has been inconsistently applied and that classification of this action as a Category B is unwarranted.

The NRC staff acknowledges that in some cases violations involving T-drains and terminal blocks have resulted in different levels of enforcement action being taken. The NRC staff maintains these cases are consistent with the Modified Enforcement Policy. In deciding what action to take under the Modified Enforcement Policy, the NRC staff considers the facts on a case-by-case basis. Factors that are evaluated include, but are not limited to, the applicability of available test reports, the quality of any required similarity analyses, and the application in which a particular component was employed. Each type of deficiency is evaluated on its own merits. For example, deficiencies where sufficient data exists although not in the qualification file, or where sufficient data is developed during the inspection to support qualification, are not considered to arrive at the categorization under the Modified Policy. Only those items judged significant on their own are aggregated to determine the proper category. If an item is judged to be a minor deficiency, a separate Severity Level IV or V violation is issued.

Of the cases cited by the licensee, for which some enforcement action was taken, the licensee has failed to articulate, beyond indicating that similar components were involved, how the NRC staff erred in its determinations of severity level or appropriate category. In the River Bend case, a Severity Level IV violation was issued because the terminal blocks involved were outside containment and used in a control application. In the case of Diablo Canyon, the tape splices involved were previously accepted as qualified by the NRC staff under the DOR Guidelines but the licensee failed to later provide documentation to meet the 10 CFR 50.49 qualification standard. In both cases, categorization of the violation as a Severity Level IV was appropriate.

For the cases in which, according to the licensee, action had not been taken, the NRC staff provides the following: At Oyster Creek, action has subsequently been taken; at Haddam Neck, enforcement action was determined to be inappropriate because the motor operators involved were replacements that had never been installed in the plant; at Salem, a Severity Level IV violation should have been issued; and at St. Lucie, some enforcement action under the Modified Enforcement Policy should probably have been taken. The isolated failures to take action do not by themselves render this action regarding ANO as an inconsistent application of the Modified Enforcement Policy.

In summary, as discussed above, the NRC staff finds no basis to change categorization of this action based on the previous applications of the Modified Enforcement Policy.

CONCLUSION

After considering the information and arguments provided by the licensee, the NRC staff finds that the licensee clearly should have known of the deficiencies cited in the Notice, that the deficiencies were significant and constituted more than an isolated problem under the Modified Enforcement Policy, and that the licensee failed to demonstrate that the NRC staff's previous applications of the Modified Enforcement Policy show that the policy was incorrectly applied in this case. Further, the NRC staff finds that neither escalation nor mitigation of the base civil penalty for the licensee's corrective actions is appropriate in this case. Therefore, the NRC staff concludes that the cited violations constitute a Category B violation that warrants the minimum civil penalty for a Category B violation under the Modified Enforcement Policy which is $50,000.

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