

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION

Report No.: 999001342/1999201

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Nuclear Activity: Anatec International, Incorporated (Anatec) provides
nondestructive testing and associated activities for the evaluation
of steam generator, condenser and feedwater heater tubing
through eddy current testing, data collection and analysis review
services to the nuclear industry.

Date of Inspection: August 30 - September 1, 1999

Inspectors: Joseph J. Petrosino, Lead Inspector
Gregory C. Cwalina, Senior Reactor Engineer
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Approved by: Daniel H. Dorman, Chief 
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1 INSPECTION SUMMARY

The NRC inspectors examined documentation related to personnel training records and certifications for eddy current data analysts, and the safety-related services that are provided to commercial nuclear power plant facilities. This inspection specifically focused on activities regarding supporting documentation associated with the qualification and certification of a selected sample of Level IIA and III eddy current qualified data analyst (QDA) personnel records at the Anatec facility in accordance with Appendix G, "Qualification of Nondestructive Examination Personnel for Analysis of NDE Data," of the Electrical Power Research Institute (EPRI) Document Technical Requirements (TR)-107569-V1R5, "PWR Steam Generator Examination Guidelines: Revision 5, Volume 1: Requirements," and the recommended practice of the American Society for Nondestructive Testing, Incorporated (SNT) - Technical Council (TC) - First Document (1A), "Personnel Qualification and Certification in Nondestructive Testing." The inspectors assessed Anatec's conformance to their customer's procurement requirements and compliance with NRC regulations.

The inspection bases were:

- Appendix B, "Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants," to Part 50 of Title 10 of the Code of Federal Regulations (CFR) (Appendix B)
- 10 CFR Part 21, "Reporting of Defects and Noncompliance"
- SNT-TC-1A, "Personnel Qualification and Certification in Nondestructive Testing,"
- Appendix G of EPRI TR-107569-V1R5, "PWR Steam Generator Examination Guidelines: Revision 5, Volume 1: Requirements"

During this inspection, a violation of NRC requirements was identified and is discussed in Section 3.1 of this report. Additionally, one instance was identified where Anatec failed to conform to NRC and Electric Power Research Institute requirements contractually imposed upon them by NRC licensees. This nonconformance is discussed herein.

2 STATUS OF PREVIOUS INSPECTION FINDINGS

This was the first NRC staff inspection conducted at the Anatec facility.

3 INSPECTION FINDINGS AND OTHER COMMENTS

3.1 10 CFR Part 21

c. Inspection Scope

The NRC inspectors reviewed Anatec's 10 CFR Part 21 program implementation, conducted discussions with the quality assurance (QA) manager regarding 10 CFR Part 21, and reviewed and commented on the procedure that Anatec adopted to implement the Part 21 regulation.

b. Observations and Findings

- b.1 10 CFR Part 21 Evaluation: On May 21, 1999, AJB Technologies (AJB), Greensburg, Pennsylvania transmitted a letter to the NRC identifying a potential 10 CFR Part 21 issue regarding suspect NDE personnel records which AJB believed were being used to certify and qualify former AJB personnel without verification of the validity of those records. A number of the individuals named in the 10 CFR Part 21 report are currently Anatec employees. The contents of this letter were also transmitted to other potentially affected NDE personnel vendors and affected licensees, including Anatec. Therefore, during the Anatec inspection, the inspectors asked whether Anatec had received the AJB information contained in the AJB letter and asked to review a copy of its 10 CFR Part 21 evaluation of the issue.

Anatec stated that they had received a copy of the information contained in the facsimile. However, Anatec stated that they had not performed the evaluation required by §21.21, "Notification of failure to comply or existence of a defect and its evaluation," of 10 CFR Part 21. The Anatec QA Manager stated that Anatec had not recognized that it was required to perform an evaluation of the potentially reportable issue in accordance with Part 21.

The inspectors determined that Anatec had failed to adequately implement the requirements of 10 CFR Part 21 and this was identified as a violation of NRC requirements. (Violation 99901342/1999201-01)

The inspectors discussed the 10 CFR Part 21 responsibilities with the QA Manager and also explained to Anatec that it was still responsible to evaluate the circumstances of the issue, as it related to Anatec's customers, in order to identify a reportable defect or failure to comply that could create a substantial safety hazard, were it to remain uncorrected, or to provide the NRC with an interim report if the issue could not be evaluated within 60 days. Additionally, the inspectors discussed with Anatec that if they did not have the technical capability to determine if a defect exists, then they were required by Part 21 to inform any applicable nuclear power plant customers.

Anatec's Evaluation of the May 1999 letter: By letter, dated October 11, 1999, Anatec provided the NRC a copy of their Part 21 evaluation of the May 1999, AJB letter. The inspectors determined that Anatec's evaluation of the issues did not address the

significance of the deviations nor did the evaluation attempt to determine whether a particular deviation could create a substantial hazard or determine whether a failure to comply is associated with a substantial safety hazard.

The definition contained in §21.3 of 10 CFR Part 21 of "evaluation" states that it is "the process of determining whether a particular deviation could create a substantial hazard or determining whether a failure to comply is associated with a substantial safety hazard." This aspect was discussed between the Anatec QA manager and the NRC inspectors. Nonetheless, Anatec's evaluation did not adequately address the issue of verification of previous certifications, records and experience. Additional details regarding the qualification and certification of QDAs is discussed in Section 3.2 below. For example, ANATEC's response, Page 2, EVALUATION states, "Anatec is stating that prior certifications, and/or personnel¹ records as described in ANATEC-08, Section 5.12, paragraph 5.12.4 are typically used by the hiring company as proof of prior training and experience and are normally retained by the individual in the same manner as a Lead Auditor or Welder certification would be."

However, Anatec did not verify the rap² sheets or certifications. If they had contacted AJB, they would have been aware that AJB's policy was to designate and maintain their personnel information, including their rap sheets or certifications, as proprietary. It was AJB's corporate policy not to provide them to the individuals. Therefore, information that was obtained directly from former AJB employees and not from AJB (or any other previous employer) should be considered suspect until substantiated with that employer.

Further, ANATEC-08 states acceptance of certifications (and not personnel records as stated in their evaluation) is sufficient. However, in the case of one QDA, no record or copy of prior certification was found in his record package; only a copy of a rap sheet that was faxed from a funeral home in Pittsburgh, Pennsylvania was found in the package. No record as to who faxed the information was noted. Additionally, the evaluation states that: "There is no prior history which would lead Anatec to believe the QDA records are inaccurate." However, the inspectors noted that there was no objective evidence in the reviewed QDA record packages indicating that Anatec took any steps to verify the rap sheet information. Instead, Anatec accepted the information provided without verification from the previous employers. Lacking any effort to validate information provided by the individuals, Anatec would not have been able to identify any concern with regard to the employee's prior history.

¹ It was noted during review of the Anatec procedures that Procedure ANATEC-08 does not mention personnel records.

² The term "rap sheet" describes the data summary sheets that are used by the NDE eddy current industry to document results of certification and recertification results for each QDA.

The Anatec evaluation also states that, "all records were generated by an authorized organization, either Zetec or AJB as noted below." However, Anatec did not audit AJB and AJB does not appear on Anatec's approved supplier's list. Although, Zetec was on Anatec's approved supplier list, the inspectors noted that Zetec information was used to certify two QDAs over a month after Anatec had certified them.

- b.2 10 CFR Part 21 Procedure: The inspectors reviewed a copy of the procedure which Anatec adopted to implement the provisions of 10 CFR Part 21, Procedure ANATEC-G-06, "10 CFR 21 Reporting of Defects and Noncompliance," Revision 2, dated September 26, 1994.

The inspectors identified several areas within ANATEC-G-06 that did not adequately ensure that deviations and failures to comply were dispositioned in accordance with Part 21. The procedure also did not ensure that deviations and failures to comply would be appropriately identified and evaluated. Further, the inspectors identified a few areas where Anatec's procedure could be confusing to an Anatec employee attempting to determine a course of action for evaluating deviations. Anatec's procedure required employees to notify their supervisor of applicable defects. However, since a defect is determined on the basis of an evaluation, an employee may believe that they were required to perform an evaluation prior to informing their supervision.

For example, the Part 21 procedure used the term defect, as defined in §21.3 of Part 21, throughout its procedure instead of the term deviation. The switching of the two terms mandates different Part 21 requirements for the vendor's necessary action. That is, a defect, as determined by a Part 21 evaluation process, must be reported to the NRC; whereas, a deviation is required to be evaluated in accordance with 10 CFR Part 21 to determine whether a defect or substantial safety hazard exists.

The switching of the two terms could have caused inappropriate action or no action to be performed. In the case of the violation discussed herein, Anatec did not fully understand that the issues identified in the AJB letter could have represented deviations in the Anatec quality assurance (QA) program regarding verification of personnel qualification, certification and educational requirements. Consequently, Anatec did not recognize that it was required to perform an evaluation in accordance with Part 21 as cited in NOV 99901342/1999201-01.

The general requirements stated that for those cases where reporting is required by other NRC regulations, duplicate evaluation and reporting under 10 CFR Part 21 is not required. Discussions indicated that Anatec personnel were not aware of other NRC regulations concerning reportability nor of the NRC timeliness requirements mentioned in the general requirements of ANATEC-G-06.

The definition section in ANATEC-G-06 did not contain all of the relevant definitions, such as, "discovery," and "evaluation" that would help ensure appropriate and effective implementation of the procedure. Evaluation is a significant term because it means that

a decision must be made whether a particular deviation could create a substantial hazard or determining whether a failure to comply is associated with a substantial safety hazard.

The inspectors discussed each area of ANATEC-G-06 which contained weaknesses with the QA Manager and obtained a commitment from the QA manager that Procedure ANATEC-G-06 would be revised as discussed within 120 days to ensure it provided appropriate direction to effectively implement the provisions of 10 CFR Part 21.

- c. Conclusions: The inspectors concluded that Anatec failed to recognize its responsibility to evaluate deviations or failures to comply in accordance with Part 21, but committed to perform an evaluation of the issues and other related deviations and inform the Lead Inspector of the results. Anatec's established procedure, ANATEC-G-06, to implement the provisions of 10 CFR Part 21 contained numerous weaknesses that contributed to its failure to recognize the need to perform an evaluation of the deviation contained in the May 1999 information received from AJB.

Additionally, the inspectors conclude that Anatec's evaluation of the issues contained in the May 1999 letter and the evaluation of suspect records for other Anatec QDAs did not appropriately address the concerns regarding verification of records, nor address the evaluation aspects of §21.3 of Part 21.

3.2 Qualification/Certification of Qualified Data Analysts

a. Inspection Scope

The inspection team reviewed the qualification program and practices for Anatec nondestructive testing (NDT) personnel, with particular emphasis on eddy current QDAs. The inspectors reviewed the qualifications to assure conformance to licensee purchase orders, Anatec internal requirements, the recommended guidance of SNT-TC-1A, and Appendix G, of EPRI TR-107569-V1R5, Revision 5.

The inspectors reviewed the qualification documents for several employees, some of whom were qualified directly by Anatec and some of whom were qualified by Anatec based upon previous qualifications from another organization.

b. Observations and Findings

- b.1 General. For each certified eddy current QDA, Anatec kept an up-to-date personnel certification summary record. The summary record included the level for which the individual was certified, the certification date and expiration date. It also included a summary of the technical examinations completed to attain certification, including the Method, Level, Date and Examiner (organization responsible for the examination), as well as the employee's test scores and copies of the written test. The summary also included a listing of the employee's experience, work history, education and training, and other documentation appropriate for qualification and certification.

The inspectors noted some inconsistencies or discrepancies in the records reviewed. For instance, some records for technical examinations listed the Examiner as the organization that actually gave the training and examination while others listed the Examiner as the employer at the time the trainee took the examination. In addition, records for required QDA annual training only consisted of verification that the QDA received the training materials and agreed to read them. There was no evidence that the trainee actually read the materials or discussed them with a trainer. The Anatec method of annual training seems contrary to the guidance provided in Appendix G of the EPRI report. Section G.4.1.3, Annual Training, states, "A record of attendance and topics covered during the training shall be maintained." The inspectors informed Anatec that they felt that wording indicated a more formal method for annual training than that implemented by Anatec. The inspectors identified, through review of older annual training records, that Anatec previously implemented a more formal process, which required discussion with a trainer.

- b.2 Anatec Trained QDAs. The inspectors did not identify any additional concerns while reviewing packages for those employees who were solely trained, qualified and certified by Anatec.
- b.3 Previously certified QDAs. SNT-TC-1A states that certification is the responsibility of the employer, and an employer's certification is revoked when an employee has been terminated. An employee whose certification has been terminated may be certified to the former NDT level by a new employer based upon examination, provided certain conditions are met to the new employer's satisfaction. These conditions are: proof of prior certification, employee was working in the capacity to which certified within 6 months of termination, and the employee is being recertified within 6 months of termination. As detailed below, the inspectors identified several concerns for those employees who initially received QDA training, qualification and certification while employed at another organization and were recertified by Anatec.

As stated above, SNT-TC-1A says that an individual can be recertified by a new employer based upon examination and written proof of prior certification. In all cases, Anatec administered written examinations for Level IIA or III qualification in accordance with Anatec procedures and industry guidance. However, the inspectors identified multiple packages where Anatec relied on certification and qualification test results (written and practical) from a previous employer to certify analysts as QDA qualified. [Note: Level IIA written examinations are different than QDA written examinations.] No form of practical examination was given (either for the Level IIA/III or QDA certifications). In addition, the inspectors determined that Anatec relied on certifications and QDA "Data Summary" Sheets (A.K.A. "rap sheets") that were obtained directly from the employee, not from the employee's former employer. The inspectors concluded this did not adequately meet the intent of "proof of prior certification," because Anatec did not verify the validity of the rap sheet or certification with the previous employer. In addition to the guidance in SNT-TC-1A, Section 5.5.4 of Anatec-08, "Certification of NDT Personnel,"

states, "Training programs administered by other companies or organizations prepared in accordance with this written practice will be considered adequate." Anatec did not verify that the employee's previous training was prepared in accordance with Anatec's written practice.

Specifically, the inspector identified 5 examples (See Table 1, Employees A, B, C, D, and E) where Anatec accepted a Level II/III and QDA certification from another organization without verifying that the paperwork supplied by the new employee (e.g., certification and/or QDA Data Sheet) was valid. In addition, Table 1 also shows that Anatec was inconsistent as to what was acceptable for qualification. In some cases Anatec used student supplied rap sheets and certifications (Employees A, and E). In others Anatec used only the rap sheet (Employees C, D, and F), or certification (Employees B and G). In all the above cases, the rap sheet or certification was a copy of the AJB rap sheet or certification. The inspectors contacted AJB and were told that AJB considered the rap sheets and certifications as the property of AJB and had not authorized their release or use as proof of prior certification. Further, AJB had not been audited by Anatec and was not on Anatec's list of approved suppliers. Therefore, there was no documented basis for acceptance of AJB rap sheets or certifications, (whether provided by AJB or the employee) to fulfill the guidance of SNT-TC-1A or Anatec's internal procedure.

The inspectors noted that, earlier in 1999, Anatec seemed to recognize the weaknesses in their certification process. In several cases, Anatec augmented their basis for certification by confirming the employee's training and/or experience. In three cases (Employees A, B, and G), Anatec contacted Zetec, Incorporated (Zetec), the provider of the training. Zetec transmitted a facsimile to Anatec stating that the employees had successfully completed their QDA training course. Although Zetec is on Anatec's approved supplier list, the training was provided under contract to AJB. Since Anatec was not aware of the specific requirements of the AJB training contract, their reliance on the Zetec facsimile is unsupported. Anatec did not provide assurance that the Zetec training was provided in accordance with the Anatec approved training and QA program. Further, the inspectors also noted that, in most cases, verification was done after the employee had been certified by Anatec and, in some cases, after the employee had performed work at a licensed facility.

In two other cases (Employees C and D), Anatec's certification was based, in part, upon an Anatec interoffice memo stating that the employees had received ET Level IIA Data Analysis training while employed at AJB. The memo does not state that the employees successfully completed the training, only that it was administered. The memo was signed by an Anatec Level III examiner who had also been employed at AJB at the time of the testing. There was no documented evidence that Anatec verified the training with the former employer.

The inspectors informed Anatec that the failure to properly verify the validity of rap sheets, certifications and other documents relied upon to perform certification, in accordance with SNT-TC-1A and Anatec's procedures is identified as

Nonconformance 99901342/1999201-02. The inspectors also informed Anatec that the potential improper certifications should be reviewed and dispositioned in accordance with 10 CFR Part 21.

The inspectors also identified a weakness in Anatec's documentation process. Through review of the QDA Data Sheets, the inspectors identified two examples (See Table 1, Employee E and F) that appeared to indicate there were errors in the QDA test taking process and contrary to the actual outcome, the QDA test should not have been passed. One employee, E, appeared to take the initial qualification test four times in quick succession before passing. Appendix G of EPRI TR-07569-V1R5 and Anatec-08 require additional training and a 30-day waiting period after failing the test the third time. A second employee, F, appeared to take the requalification test two times in quick succession before passing. For requalification, EPRI requires a full standard practical examination if the requalification examination is failed the first time. In both cases, through discussions with Anatec and documentation from the employee's previous employer, the inspectors determined the third initial qualification test and the first requalification test, respectively, were regraded, not retaken. This information should have been documented by Anatec when initially identified.

- b.4 Questionable Certification: The inspectors identified a further anomaly with one data analyst (See Table 1, Employee D) in addition to the issues described above. The rap sheet indicated the employee failed the practical examination on the third attempt and took the examination a fourth time on the following day (October 20, 1998) and passed. Appendix G of the EPRI guidance and Anatec-08 require additional training and a 30-day waiting period after failing the test the third time. There was a handwritten note, dated October 20, 1998, on the rap sheet written by the test proctor which stated that an administrative error had resulted in the student's test answers being stored in the wrong location [on the third attempt]. That error resulted in the failing grade on the third attempt. The proctor's note indicated that the answers had been retrieved and regraded the following day, resulting in the passing grade. In response to inspectors questions on the note, Anatec contacted the AJB test proctor (currently employed by Anatec) who provided a detailed explanation of the issue. The inspectors visited AJB to verify the information provided by the proctor. A review of the employee's qualification file revealed that the handwritten note found on the Anatec QDA rap sheet was not on the rap sheet in AJB's files. Since the employee had taken the test while employed at AJB, the absence of the note on the AJB official records raised a question regarding the validity of the note.

Subsequent discussions conducted with a Westinghouse Level III NDE/ET QDA indicated that the Westinghouse QDA software program used was capable of introducing the anomalies that were stated to have happened. Subsequent discussions with EPRI NDE Center representatives indicated that they recalled speaking with the Level III subject Proctor regarding the anomalies encountered during the performance of the student's QDA exam with the Westinghouse QDA software program. Although neither of the two EPRI representatives stated that they had documented the date and time of the telephone call with the Level III Proctor, they distinctly remember discussing the problem with the AJB Level III QDA proctor.

Finally, this matter was discussed again with the Level III Proctor who administered the test and wrote the note on the QDA sheet. He indicated to the inspectors that his recollection of the matter was that he wrote the note on the original rap sheet and provided it to the AJB owners before he left employment with AJB in December 1998. The inspectors were unable to determine why the handwritten note found in the Anatec qualification file does not also appear in the AJB file.

The Proctor also indicated that he had provided copies of the AJB rap sheets to each of the students that he had trained and conducted the QDA exam. He explained that the rap sheets were provided to the students for their own records.

c. Conclusions

The Anatec method of annual training does not provide a positive indication of a record of attendance and topics covered. The inspectors informed Anatec that more formal method for annual training was appropriate. The failure to properly verify the validity of rap sheets, certifications and other documents relied upon to perform QDA certification, in accordance with Anatec's procedures was identified as a nonconformance. The potential improper certifications should be reviewed and dispositioned in accordance with 10 CFR Part 21.

3.2 Entrance/Exit Meetings

In the entrance meeting on August 30, 1999, the NRC inspectors discussed the scope of the inspection, outlined the areas to be inspected, and established interfaces with the Anatec QA Manager. In the exit meeting on September 1, 1999, the NRC inspectors discussed their findings and concerns.

4. PERSONS CONTACTED

Lisa Gardner	Anatec QA Manger	
Darren Howe	Anatec Level III QDA	
Delle Obazenu	Anatec Level III QDA	
Craig Smith	EPRI NDE Center	**
Gary Henry	EPRI NDE Center	**
Gary Pierini	Westinghouse NDE	**

** Contacted by Telephone

Table 1 - QDA Certification Basis

Employee ID	Date of Anatec Cert.	QDA Data (Rap) Sheet	Certification	Additional Basis for Certification
A	8/20/98	<ul style="list-style-type: none"> • 8/4/98 fax from employee - name handwritten - no ID of testing organization 	8/5/98 fax from employee - AJB cert. of 1/22/98	<ul style="list-style-type: none"> • 4/16/99 fax from Zetec - successful completion of QDA training and testing
B	3/4/99	None	copy of AJB cert dated 1/22/98	<ul style="list-style-type: none"> • 4/16/99 fax from Zetec - successful completion of QDA training
C	3/4/99	<ul style="list-style-type: none"> • 1/18/99 fax from Gaines funeral home (identity of sender unknown) - no ID of testing organization 	None	<ul style="list-style-type: none"> • copy of Zetec training certificate dated 8/2/96 for Level IIA • copy of Zetec Continuing Education Program certificate for Level IIA • 3/3/99 Anatec Interoffice Memo from Level III stating that Level IIA training was given to employee by Level III while employee and Level III examiner were employed at AJB
D	3/4/99	<ul style="list-style-type: none"> • Data sheet indicates test taken while employed at AJB - handwritten note dated 10/20/98 by Level III explaining basis for regrading after apparent failure on 3rd attempt • No indication of data sheet origin 	None	<ul style="list-style-type: none"> • 3/3/99 Anatec Interoffice Memo from Level III stating that Level IIA training was given to employee by Level III while employee and Level III examiner were employed at AJB • 9/99 message from Level III examiner documenting basis for 10/20/98 regrading after failure on 3rd QDA attempt

Table 1 - QDA Certification Basis (cont.)

Employee ID	Date of Anatec Cert.	QDA Data (Rap) Sheet	Certification	Additional Basis for Certification
E	8/98	<ul style="list-style-type: none"> • 7/21/98 fax from employee - QDA data sheet implied the QDA test was taken 4 times in quick succession in conflict with Anatec and industry practice and guidance 	7/16/98 fax from employee	<ul style="list-style-type: none"> • 4/1/99 fax from previous employer verifying experience hours • 8/31/99 fax from previous employer documenting basis for regrading after failure of requalification exam
F	9/98	<ul style="list-style-type: none"> • 9/18/98 fax from AJB Technologies - QDA data sheet implied the 1997 QDA requalification test was failed but another requalification test was immediately taken instead of a full standard practical exam 		<ul style="list-style-type: none"> • 9/99 message from previous employer documenting basis for regrading after failure of requalification exam
G	9/21/98	None	9/18/98 fax from AJB	<ul style="list-style-type: none"> • 8/24/99 fax from Zetec - successful completion of QDA training