

U. S. NUCLEAR REGULATORY COMMISSION  
AUDIT OBSERVATION REPORT  
FOR THE  
NEVADA NUCLEAR WASTE STORAGE INVESTIGATIONS PROJECT  
AUDIT NO. 88-02 OF  
HOLMES & NARVER, INC., ENERGY SUPPORT DIVISION

Date:

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## 1.0 INTRODUCTION

This report contains a summary of the results of the NRC staff observations of the DOE/WMPO quality assurance (QA) audit of Holmes & Narver, Inc., Energy Support Division (H&N) in Las Vegas, Nevada. H&N is the architect engineer for the surface facilities for the repository. To date, the H&N Level I work has involved aerial photography of the Yucca Mountain Site.

The audit was conducted from March 28 through April 1, 1988 by Science Applications International Corporation (SAIC) for the Department of Energy (DOE). Its purpose was to verify the implementation of the H&N QA Program Plan (QAPP) Revision 0, as it relates to the activities on the Nevada Nuclear Waste Storage Investigations (NNWSI) Project.

## 2.0 AUDIT PURPOSE AND SCOPE

The purpose of the audit was to evaluate the effectiveness of the H&N QAPP as it relates to the implementation of the NNWSI QA requirements for the NNWSI Project. NRC's purpose for observing the audit was to see if this objective was attained.

The scope of the audit included an evaluation of the H&N QAPP, the H&N implementing procedures, and follow up of previous audit results and corrective actions taken. The audit focused on the applicable areas of the 10 CFR 50 Appendix B criteria involving the QA program, design control, procurement, instructions, drawings and procedures, document control, measuring and test equipment, nonconforming items, corrective action, QA records, and audits.

## 3.0 AUDIT TEAM MEMBERS AND PARTICIPANTS

W. Kazor, Audit Team Leader, Science Applications International Corporation (SAIC)  
G. Heaney, Auditor, SAIC  
R. Klemons, Auditor, SAIC  
F. Ruth, Auditor, SAIC  
P. Karnaski, Technical Specialist, SAIC  
A. Bara, Technical Specialist, SAIC (part time)  
R. Monks, Observer, DOE/WMPO, NV  
W. Marchand, Observer, Weston, DOE/HQ  
J. Holonich, Observer, NRC  
W. Belke, Observer, NRC

## 4.0 NRC OBSERVATIONS OF THE H&N AUDIT TEAM

Based on a review of a written summary of the qualifications provided by the audit team members, the NRC staff concluded that the overall qualifications and experience of the audit team was more than adequate to conduct the QA programmatic audit of H&N. Their qualifications far exceeded those listed in Supplement 2S-3 and Appendix 2A-3 of NQA-1 for audit personnel and lead auditors. The lead auditor had a B.S. and M.S. in mechanical engineering and a M.A. in economics and industrial management. He also had over 40 years experience in planning, organizing and directing research, development, design, manufacturing, and testing activities both in the nuclear and petroleum industries. At least half of this experience has been in the development and management of QA programs. All members of the audit team were certified lead

auditors and had a substantial amount of nuclear and quality assurance experience. For example, two of the auditors had B.S. degrees in mechanical and electrical engineering with experience in the application of the NRC requirements. The other auditor had a B.S. in business administration with over thirteen years experience in QA/QC. The technical advisor had over 30 years experience in the power industry and was involved with design, construction and quality assurance of nuclear plants. He also was a registered professional engineer in 35 states.

As a result of the NRC's observation of the audit, the staff concluded that the auditors were thoroughly prepared and knowledgeable in the H&N QA Program Plan, H&N implementing procedures, and previous H&N audits. This was demonstrated by the fact that each team member had developed a comprehensive checklist that formulated the basis for the audit.

Pre and post audit conferences (entrance and exit meetings), and a preparatory team meeting were held as well as a daily team caucus meeting to review audit findings and observations. The team leader presented information to the audited organization in a clear and concise manner. At the daily team meetings, input was solicited from the team as well as the DOE and NRC observers. This process worked extremely well and resulted in developing several recommendations to H&N. One of the major recommendations for H&N developed by the audit team, was to consider expanding the QA staff devoted to NNWSI activities in order to meet the increased work load. Another notable attribute of the team leader at the daily team meetings was the adjustment of the team activities and schedules in order for the team to perform the audit more efficiently.

In summary, the coverage and conduct of the audit were well done. Each team member knew the areas to cover, performed the audit using the checklist, and asked detailed questions in order to gain an understanding of the areas being audited. Because of the experience and training of the team, each member had substantial knowledge of the applicable standards and requirements. This was repeatedly demonstrated during the discussions as team members could provide a particular reference easily.

Each auditor was able to reach a conclusion on a solid foundation of facts and had sufficient knowledge in the area of QA to determine if the finding was a system discrepancy or isolated flaw. An example of this was the team discussions on the lack of familiarity of H&N personnel with the NRC requirements. As the discussions expanded, it became apparent to the team that H&N needed to increase the amount of QA training being provided plus enlarge the number of QA personnel devoted to NNWSI activities. The findings of the team resulted in 13 preliminary Standard Deficiency Reports (SDRs) and five observations. The audit team findings are discussed in Section 5.0 of this report. Also, the team followed up on one previous SDR which it found was still unresolved. This finding revealed that the implementing procedures were not revised to incorporate the latest changes in the H&N QAPP. Based on this followup, the team decided to issue a second SDR requesting a specific schedule for when all the implementing procedures would be revised to incorporate the H&N QAPP revisions.

Because the audit dealt with the programmatic aspects of the QAPP, no technical subject matter was reviewed. However, as technical work increases, the NRC staff would expect to see an increase in the technical aspect of audits. During the course of the audit, the NRC observers were allowed total freedom

by the audit team to ask clarifications from H&N on numerous issues raised during the audit process. In doing so, the NRC staff was able to participate in the audit team meetings and assist the audit team in their findings. In addition, the staff had several observations which address specific observations and recommendations. These are detailed in Appendix A of this report.

#### 5.0 PRELIMINARY RESULTS/FINDINGS OF AUDIT TEAM

As a result of the audit, the SAIC team had several findings that it reported to H&N. These are listed below:

- No position descriptions for personnel performing surveying activities and no minimum education requirements for Level I, II, III technicians.
- Certain H&N implementing procedures do not have effective dates or vertical bars in margins to denote changes.
- A QA review is not being performed on work initiation forms.
- Interdisciplinary design reviews are not being performed. (Previous finding and corrective action to revise procedure not accomplished.)
- An annual review of procedures by the technical project office was not performed.
- No master index or log sheet were in the records vault to identify what records are in the vault.
- For corrective action reports, the cause of the condition was not identified.
- Calibration services have been contracted without a procedure.
- No indoctrination and training records were in the training file in the non-destructive examination laboratory.
- Raw test data were missing from a test report.
- An audit schedule was not established.
- There was no procedure for issuing and controlling QAPP revisions.
- For the direct optical survey form and tunnel x-section forms, there was no signature verification by the party chief.
- A clear and concise history file of all procedures and revisions is not totally in place.
- The Survey department horizontal and vertical control index contains pencil corrections and uncontrolled revisions to coordinates of control points.

#### 6.0 CONCLUSIONS

Based on the information presented in Section 4.0, the staff concluded that the NNWSI Audit 88-02 was complete and thorough and was performed in an acceptable manner.

## APPENDIX A

### NRC OBSERVATIONS AND RECOMMENDATIONS WITH RESPECT TO THE H&N QA PROGRAM

The observations and recommendations listed below are, for the most part, a team effort and were mutually discussed between audit team members, the H&N staff and NRC staff. The NRC staff is not recommending they be documented on a Standard Deficiency Report. However, the NRC staff believes the observations and recommendations thereto would enhance future implementation of the H&N QA program. Through discussions with the H&N QA staff, the NRC staff understands improvements are in process for these observations. The staff will consider these observations in its review of the H&N QA program. In addition, the staff recommends that future audits of H&N by DOE/WMPPO investigate these observations and determine if SDRs should be issued.

#### A. Observation

Through frank and open discussions with the audit team members and the H&N staff, it appeared there was a certain amount of unfamiliarity in the transition from the weapons QA requirements versus the NRC QA requirements of 10 CFR Part 60. Many of the H&N personnel have spent much of their career in the weapons program. Consequently, they are not thoroughly familiar with the NRC's regulations and efforts needed to meet those requirements. It was the NRC observer's understanding that this transition in the initial stages was difficult but is steadily improving whereby H&N personnel are better understanding the NRC requirements.

#### Recommendation

As stated in the H&N QAPP, Section 2, Paragraph III.B, "The program provides for indoctrination and, as necessary, training of personnel performing activities that affect quality to ensure that suitable proficiency is achieved and maintained." Therefore initial additional training sessions should be established with all DOE NV and contractor personnel to better convey NRC requirements, where they emanate from, lessons learned from the reactor QA program studies and why NRC requirements must be fully documented and retained for potential licensing data. This could be accomplished with NRC seminars at the site and at TPO meetings.

#### B. Observation

With additional discussions with the audit team members and the observance of the associated H&N staff and QA members, it appeared that QA did not have sufficient staff devoted to effectively perform their function. For example, it is our understanding that there are three QA individuals responsible for managing the QA function. Of these three QA individuals, one is full time for the waste program and the other two divide their time between the weapons QA function and the waste QA function. It is recognized that there is at this time, minimal QA Level I work being performed, with the majority work being QA Level II and III. However, it would appear prudent at this early stage of the QA program implementation, that adequate QA staff be devoted to the project to effectively implement the H&N QA program.

Recommendation

As stated in the H&N QAPP, Section I, paragraph III.C.2, "Full-time, dedicated, experienced QA personnel will be assigned by the CQA to the Project with additional qualified QA personnel made available to the project as necessary." Therefore, the H&N CQA should review the H&N scope of work to determine the QA workload, established priorities, and consequently, determine how many full-time QA personnel will be needed to effectively implement the H&N QA program.