

**Readiness Review Report**

**for**

**Civilian Radioactive Waste Management System  
Management and Operating Contractor**

**Nevada Site FY92 Scope of Work**

**January 10, 1992**



Approved  
Readiness Review Team Leader



Approved  
Readiness Review Board Chairperson

## TABLE OF CONTENTS

	Page
1. Purpose .....	1
2. Executive Summary .....	1
3. Readiness Review .....	3
3.1 Quality Assurance .....	4
3.2 Design Control .....	6
3.3 Records Management/Document Control .....	7
4. Management Control System .....	8
5. Recommendations and Conclusions .....	8
6. Attachments .....	10
6.1 Biographies of Participants .....	11
6.2 Task Matrix .....	12
6.3 Open Items List .....	13
6.4 Open Item Reports .....	14

## 1. PURPOSE

The Nevada Site of the Civilian Radioactive Waste Management System (CRWMS) Management and Operating (M&O) Contractor has a requirement to execute a portion of its FY92 scope of work as defined in Attachment 6.2, Task Matix, using an M&O Quality Assurance (QA) Program. As a prerequisite for the M&O General Manager to authorize the start of quality affecting work (QAW), a Readiness Review was conducted over the period of November 22, 1991 to December 18, 1991. The purpose of the review was to ascertain whether the M&O Nevada Site had completed all of the prerequisites for a QA program to ensure the FY92 scope of work could be accomplished in accordance with the requirements of the ASME, NQA-1-1989 Edition, Quality Assurance Program Requirements for Nuclear Facilities; the Quality Assurance Requirements Document (QARD) for the Civilian Radioactive Waste Management Program, DOE/RW-0214, Revision 4; and the CRWMS M&O Quality Assurance Program Description (QAPD), Revision 2.

## 2. EXECUTIVE SUMMARY

As required by QAP-2-6, Readiness Review, the M&O General Manager directed a review of the M&O Nevada Site on November 22, 1991, and appointed a Readiness Review Team Leader, a Readiness Review Board Chairperson and Board Members. The Readiness Review Team Leader selected a Readiness Review Team with experience in the areas of the M&O Nevada Site FY92 scope of work. The biographies of team and board members are included in Attachment 6.1. The Readiness Review Team developed a Readiness Review Plan which was presented to the Readiness Review Board on December 3, 1991, and approved after changes directed by the Board Chairperson. The team developed attribute lists for determining the accomplishment of prerequisites. The attribute lists were approved by the Readiness Review Team Leader on December 9, 1991. The review was conducted using the attribute lists by considering information presented during the review formal session on December 11, 1991; by reviewing M&O Nevada Site procedures and plans; and by interviews with site personnel. Attributes not satisfied were identified by the Review Team as open items. Those open items of a more serious nature resulted in the recommendation for hold points, beyond which work in the associated area cannot proceed until the open item is rectified to the satisfaction of the M&O General Manager.

The quality affecting scope of work for the M&O Nevada Site to be performed under the M&O QA program falls under the following major Level 3 elements of the Program Work Breakdown Structure: Systems Engineering, Waste Package Development, Repository, Exploratory Studies Facility, and Project Management. The QAW within the first four of these elements consists of design activities associated with MGDS design and development in support of ESF Title II design and Repository and Waste Package Pre-Advanced Conceptual Design. The QAW within the project management element consists of establishing a quality assurance program, and establishing and implementing processes that apply to the M&O QA program. Specific tasks in each element are displayed within the Task Matrix in Attachment 6.2.

The Readiness Review Team divided the Nevada Site scope of work into three primary areas for the conduct of the review: the Quality Assurance Program, which addressed the requirements of NQA-1, QARD and M&O QAPD Sections 1,2,16, and 18; Design Control, which addressed the requirements of Sections 3 and 5; and Records Management/Document Control, which addressed the requirements of Sections 6 and 17. Computer software, which addressed the requirements of Section 19 was also reviewed. The requirements of Sections 4, 7, 8, 9, 10, 11, 12, 13, 14, 15 and QARD Appendix A, Section 20, Scientific Investigations were not applicable for the M&O Scope of Work. Section 20 work is performed under the OCRWM QA program. Additionally, although not applicable to the readiness of the QA Program, a review was conducted of the Management Control System. Each area was reviewed to accomplish the following:

1. Verify the tasks to be performed within the FY92 scope of work
2. Verify the correct identification of the tasks which must be performed using the M&O QA Program
3. Verify the readiness to accomplish the tasks considering the criteria of the OCRWM QARD
  - Work activity prerequisites have been satisfied
  - Detailed technical and quality assurance program administrative procedures appropriate for defined work are in place
  - Process for ensuring that personnel are suitably trained and qualified is in place which was verified by reviewing samples of training records.

The Task Matrix in Attachment 6.2 identifies each task within the FY92 scope of work to one of three categories: 1) Tasks to be performed using the Yucca Mountain Project QA Program; 2) Tasks that are not QAW; 3) Tasks to be performed using the M&O QA Program. Tasks to be performed using the M&O QA Program are further associated with the appropriate criteria of the NQA-1, QARD and M&O QAPD. The last two sections of the matrix identifies the manager responsible for the task and the personnel who will perform the QAW. Attributes were determined to be open or closed. The open items are listed on the Open Item List in Attachment 6.3 and the individual Open Item Reports are in Attachment 6.4.

Based on the results of the review of each area, the following recommendations are made regarding proceeding with the M&O Nevada Site FY92 scope of work:

1. The Quality Assurance Audits and Quality Engineering programs are sufficient to begin work.
2. The Design Control area will be sufficient to begin work once the procedural changes noted in the eleven open items, all of which are recommended as hold points, have been completed. These changes were discussed with the MGDS Design and Development Manager and it was agreed these changes were not

complicated or difficult and could be accommodated in a relatively short period of time. This time period is compatible with the expected actual start of the first M&O quality-affecting work in FY92 such that no delays are anticipated.

3. The Records Management/Document Control area is sufficient to begin work. There were seven open items discovered, two of which are recommended as hold points. These items are already being corrected with the rewrite and consolidation of quality procedures. The hold points do not affect any currently planned work.
4. Procedures do not exist to adequately control the development, validation/verification and software configuration control of quality affecting computer software and a hold point should be established to require the development of the necessary procedures prior to utilizing any quality affecting software. The M&O has recently completed the Computer Software Quality Assurance Plan (QAPD Section 19) upon which the specific software procedures must be based and submitted it to OCRWM for their required approval. No specific quality affecting software use is currently planned, therefore, their completion should be easily accomplished without any impact on the Project schedule.
5. The Management Control System is sufficient to direct the FY92 scope of work. However, the YMP SEMP and CMP must be modified to recognize the role of the M&O in the Yucca Mountain project. Since the modifications are administrative and contractual in nature they will have no impact on quality affecting work.
6. The YMPO requires all Project participants to submit and receive approval of grading packages for assigned work. Work was classified according to the M&O grading procedure. The M&O grading procedure has been submitted to OCRWM for approval. The team was satisfied that adequate care had been given to the grading of Quality Affecting Work, however, the inconsistency in procedures must be resolved.

### **3. READINESS REVIEW DISCUSSION**

The M&O Contract Statement of Work defines a transition phase which covers a period of time of approximately 20 months from contract award to completion of phase-in of work from existing contractors. During the transition phase, the M&O is to organize, staff, develop/implement management control systems and a Quality Assurance Program, train personnel and complete the readiness process to begin technical work. The completion of the M&O management control system has been impacted by the OCRWM Management System Improvement Strategy (MSIS), in which the M&O has been a major participant. That strategy included a complete review of the hierarchy of management control documents and the relationship of Program and Project documents as well as the relationship of OCRWM and M&O documents. Closure on those issues was achieved on November 19, 1991, and will allow the

M&O to complete its management control system. In order to proceed with the limited Quality Affecting Work (QAW) directed by OCRWM for the M&O in FY92, which must be performed under the M&O QA Program, the M&O proposed to the Director, M&O Management Division, OCRWM, on November 15, 1991, a three phased approach to allow the M&O to achieve readiness. Approval was received on November 22, 1991, to proceed with that approach. The review of the M&O Nevada Site was the first phase of that approach. The following were the applicable baseline documents for the review:

- An M&O Nevada Site Management Plan to direct the scope of work
- M&O QA Program
  - Current OCRWM QARD
  - Conditionally approved M&O QAPD
  - M&O approved QAP-2-3, Grading
  - QAPs/ILPs required by the scope of work
- YMPO Systems Engineering Management Plan (SEMP)
- YMPO Configuration Management Plan (CMP).

The Readiness Review Team reviewed the tasks assigned to the M&O Nevada Site. The matrix in Attachment 6.2 reflects the assignment of the tasks to one of three categories:

- QAW to be performed using the YMPO QA Program
- Work that is not quality affecting
- QAW to be performed using the M&O QA Program.

Those tasks to be performed using the M&O QA Program were then placed into the appropriate category based on the sections of the NQA-1, QARD and M&O QAPD. Finally, the Review Team validated the accomplishment of the prerequisites of each section to which tasks were assigned. No tasks were assigned to sections 4, 7, 8, 9, 10, 11, 12, 13, 14, 15 and QARD Appendix A, Section 20. The following sections of this report address the major areas of quality affecting work within the M&O Nevada Site FY92 scope of work.

### **3.1 QUALITY ASSURANCE**

During the period of December 11 and 12, 1991, a Readiness Review was conducted on the M&O Quality Assurance (QA) program at the Nevada Site. The QA department is staffed with a site QA Manager who provides QA support as needed to the M&O Nevada Site Manager. The QA organization is independent of the line functions that allows QA workers the freedom to identify quality problems, initiate, recommend or provide solutions, and verify implementation of solutions.

Based on the projected workload of the M&O Nevada site line organizations, there is an adequate QA workforce to execute the required QA tasks. The required tasks are defined in Attachment 6.2, Task Matrix.

The M&O has completed a Quality Administrative Procedure, QAP-2-3, Establishing QA Program Controls (Classification and Grading), and submitted it to OCRWM for approval. This QAP offers a new approach to grading QAW and was used to classify and grade the M&O Nevada Site work. The Yucca Mountain Project currently requires all Project participants to submit grading packages for approval. The two approaches are not consistent and therefore, clarification is required as to the requirement for the M&O Nevada Site to submit grading packages. An Open Item is recommended until this issue is resolved between the YMPO and M&O Nevada Site management.

The proper procedures are approved and in place to execute the QA functions described in the workscope. QA has been active in the development of procedures and providing training where needed to amplify QA requirements. Personnel interviewed during the review were knowledgeable of QA program requirements and their rights to express quality concerns. Personnel have two avenues to express concerns. One program under the M&O QA program and the second under the OCRWM concerns program.

The QA program elements are defined in properly approved procedures. The current program uses a mix of M&O QA approved Quality Administrative Procedures (QAPs) and M&O QA approved Implementing Line Procedures (ILPs). A review of the training records for selected members of the group scheduled to perform quality affecting work reflected that they had completed their training assignment of required procedures. Personnel interviewed were able to properly articulate the procedure requirements when questioned during the review process.

A Corrective Action program has been installed that provides a process to identify, document and correct quality affecting program deficiencies. This program provides for escalation to higher management and work stoppage if necessary. Personnel have been trained in the use of this process. The program includes a root cause analysis review to aid in the prevention of repetitive occurrences. A trend analysis procedure is in the final draft phase but is not needed to start work. This procedure will need to be in place as the program matures.

The M&O QA Manager, Fairfax, has executed the Audit program to provide the program overview as defined in the OCRWM QARD and QAPD. Two audits have been performed at the M&O Nevada Site.

<b>Audit Report No.</b>	<b>Area Audited</b>	<b>Date Performed</b>
91-NSA-02	Document Control	Dec. 4-5, 1991
91-NSA-01	Indoctrination and Training	Nov. 21-22, 1991

No significant items were identified as a result of these audits. The audits were managed by a certified Lead Auditor who has extensive QA program knowledge and audit experience. A review of the audit reports reflect documentation of the proper implementation of the QA audit program.

Based on the review conducted, the proper and appropriate QA program elements have been set in place and executed. This review of demonstrated QA program elements is adequate to start work as defined in Attachment 6.2, Task Matrix.

### **3.2 DESIGN CONTROL**

After preliminary review and team discussions an attributes list was ultimately configured that reflected the appropriate questions required to confirm compliance with the baseline documents. The design control representative and the regulatory compliance representative on the Readiness Review Team met with the MGDS Design and Development Manager (DDM), his functional managers, and their subordinates as appropriate to determine whether MGDS was adequately prepared to execute design activities on the defined portion of its FY92 scope of work using the M&O QA program. The CRWMS M&O Nevada Site Activities List for 12/91 through 6/92 was reviewed in detail. The QAW/non-QAW classifications were found to be satisfactory. The prerequisites and technical/administrative procedures were found to be in place and appropriate except for the following, which are listed as open items:

- Selecting approved checkers was not in compliance with QARD
- QAW level determination and notation of same on design documents was not described or required
- Verification of design inputs was not clearly defined for use by persons outside of MGDS
- No provision was made for the verification and transmittal of design inputs within the MGDS organization
- No guidance is provided for developing Interface Control Documents
- "Reviewing and approving" requirement by DDM of Design Inputs is not clearly stated or described as such on the transmittal form.
- On Design Inputs the status of the design information utilized was not required
- Basis for the selection of reviewers for intradiscipline and interdiscipline reviews is not indicated
- No controls are provided for who performs the interdiscipline reviews (signoff matrix required)
- No checklist is included in any of the verification procedural descriptions
- Calculation cover sheet did not provide place for checker to sign.

These 11 open items should require hold points to ensure they are satisfactorily corrected and the corrections verified prior to executing any of the defined portion of FY92 design control work to be done under the M&O QA program.

### **3.3 RECORDS MANAGEMENT/DOCUMENT CONTROL**

After a review of the Records Management and Document Control activities, it is recommended that the M&O Nevada Site is ready to perform quality affecting work in this area. Upon the completion of attribute lists 6 and 17, seven items are open with two recommended as hold points.

The M&O Nevada Site has a complete process for the capturing, storage, and retrieval of quality records. This process is driven by procedures QAP-17-1 and SRP-17-1 and SRP-17-2. Similarly, their ability to manage the control of controlled documents is also considered acceptable as demonstrated by procedures QAP-6-1 and SRP-6-1. Except for the seven open items, objective evidence was provided for all attributes. This evidence was a combination of specific paragraph references in prepared procedures, personnel interviews, and the reviewer's observations of record and document transactions.

Although seven open items and two hold points are identified, it is noted that plans for corrections are already in progress. QAP-6-1 and SRP-6-1 are being consolidated into QAP-6-1 and QAP-17-1, SRP-17-1 and SRP-17-2 are being consolidated into QAP-17-1. QAP-6-1 and QAP-17-1 will govern all Records Management and Document Control activities throughout the M&O. These procedures are in draft form and already contain solutions for the open items found in this review.

Records management/document control personnel who will perform quality affecting work in this area were interviewed and determined to be qualified to accomplish their written job descriptions. Their training matrices were also reviewed for completeness and the appropriate requirements had been identified.

The YMPO Central Records Facility (CRF), Program Microfilm Center (PMC) and Document Control Center (DCC) are currently operated by another program participant. These activities are planned to transition in August 1992. Although not covered by this review, it should be noted that these activities cannot be performed prior to the development of appropriate procedures and adequate training of personnel to these procedures. As a result, this is considered an open item and a hold point is recommended.

In response to the QARD, System 80 requirements were evaluated. Procedures were in final draft and were found adequate. However, these procedures are not approved at this time and therefore an open item is established. These procedures are currently planned for approval and distribution by January 17, 1992.

#### **4. MANAGEMENT CONTROL SYSTEM**

The necessary personnel, systems, facilities, and equipment are in place to support the conduct of the M&O Nevada FY92 scope of work. The management organization, reporting to the M&O Nevada Site Manager, contains adequate administrative, cost and schedule control, human resource, and other functions to support the technical and programmatic activities.

Systems are in place and functioning to translate work assigned by the client into M&O organizational assignments, budgets, schedules, and milestones to which manager assign individuals and control the work.

A review of the M&O Nevada Site office space, equipment and computer hardware and software was conducted and considered adequate to accomplish the scope of work.

The M&O Nevada Site will work to the Yucca Mountain Project Systems Engineering Management Plan (SEMP) and Configuration Management Plan (CMP). Neither document has been changed to reflect the role of the M&O in the project. Quality affecting work is not being impacted as the work is being performed to quality administrative procedures. However, the M&O Nevada Site must work with the YMPO to change these management documents. At the Review Board briefing, the M&O Nevada Site and YMPO management agreed to having this accomplished by January 31, 1992. The M&O Nevada Site Quality Assurance Manager will track this action.

#### **5. RECOMMENDATIONS AND CONCLUSIONS**

The Readiness Review Team concluded that the M&O Nevada Site is generally ready and should be authorized by the General Manager to begin its FY92 scope of work including QAW to be performed under the M&O QA program. However, a number of hold points are recommended. There is no currently assigned work that will be restrained by the hold points until at least February 28, 1992.

- The Quality Assurance Program, which serves as the foundation for successful accomplishment of QAW is sufficient. There are no limitations in this area.
- The Records Management/Document Control functions are sufficient to manage the internal M&O program. The only exception is the recommendation that a hold point be established to prohibit the distribution of documents with unverified portions until procedures are written to address this process. There is no requirement in the near future and the procedures can be produced before a requirement develops. The M&O Nevada Site is scheduled to assume responsibility for the YMP Central Records Facility (CRF) in August 1992 which requires procedures for interfacing with other Project participants. These procedures are currently under development and although the established plan should be adequate, a hold point is recommended to verify the plans has been satisfactorily executed before the M&O Nevada Site is authorized to assume the CRF responsibility.

- The issue regarding the requirement for grading packages must be resolved by the YMPO and the M&O Nevada Site management.
- The QAW in the Design Control area is not ready. Although most procedures are in place, there are eleven deficiencies in those procedures that must be corrected. In addition, a new procedure to address the development of Interface Control Documents must be developed. A hold point is recommended to be established for each of these. Design work may not commence until they are closed. The corrections, although important, are relatively easy to accomplish and well understood by the M&O Nevada Site managers. The changes can be accomplished with no Project impact.
- The Project is not ready to utilize quality affecting software. Procedures are not in place to control such software. At this time, no specific tasks under the area of QA software are assigned, and the procedures are under development in anticipation of future assignments and should be in place before they are required. Progress is demonstrated by the completion of the Computer Software Quality Assurance Plan which has been approved by the M&O and transmitted to OCRWM for approval. This plan is the basis for the required procedures.

**6. ATTACHMENTS**

**ATTACHMENT 6.1**  
**BIOGRAPHIES OF PARTICIPANTS**

**Nathaniel W. Trembath**

**Paul W. Schwegler**

**Stephen J. Lukasik**

**Lionel J. Skidmore**

**James R. Wells**

**Raymond W. Godman**

**Daniel B. Flournoy**

**S. Martin Cummings**

**Robert A. Morgan**

**Robert A. Sandifer**

**Peter D. West**

**R. Glenn Vawter**

## **Nathaniel W. Trembath**

**Nathaniel W. ("Nat") Trembath is a consultant who recently retired from his position as vice president and assistant general manager for programs, TRW Systems Integration Group, a multidivisional advanced software, hardware and systems engineering organization within the Electronics and Defense Sector. He was named to this position in 1983.**

**Mr. Trembath joined TRW's Electronics Systems Division in 1956 and worked on inertial guidance and attitude control for ballistic missiles and satellites. From 1964 to 1968, he managed TRW's lunar excursion module abort guidance systems project and became assistant manager of the Electronic Information Systems Operation which engineered and designed communications equipment for TRW-built satellites. In 1972 he headed the Electronic Development Operation, designing space communication equipment, antennas, digital processors and microelectronics, and assumed the position of assistant general manager for projects for the Electronic Systems Division.**

**In 1977 Mr. Trembath became assistant general manager of the Ballistic Missiles Division. Two years later he became general manager of the division and was named vice president of TRW's Defense and Space Systems Group.**

**Prior to joining TRW, Mr. Trembath was an electronics instructor at Bucknell University and a research engineer at MIT.**

**A native of Forty Fort, Pennsylvania, he graduated Magna Cum Laude from Bucknell University with a degree in electrical engineering and holds an M.S. in electrical engineering from MIT. He is a member of AIAA and IEEE and is a past member of Inland Action, Inc. He served as president of the San Bernardino Area Chapter of the Air Force Association and was a member of the Board of Regents of the University of Redlands.**

**Paul W. Schwegler**  
**Vice President, Quality & Systems Assurance**  
**TRW Space & Defense Sector**  
**TRW Inc.**

**Paul W. Schwegler is vice president of Quality & Systems Assurance for the Space and Defense Sector of TRW.**

**In this position, Mr. Schwegler ensures all products are of the highest quality and meet all customer-imposed requirements; reviews government-approved systems and controls; manages Security and directs the Sector's oversight of the Compliance Audit Program and the Business Ethics and Conduct program.**

**Mr. Schwegler joined TRW in 1960. His prior positions include vice president of Industrial Relations for the Defense and Space Systems Group; and vice president and general manager of the Administrative Services Division for TRW Electronics and Defense Sector.**

**A native of Ohio, he graduated from Ohio Wesleyan University and has since undertaken graduate work at Case Western Reserve.**

**He has served in the United States Army. He currently serves as chairman of the Executive Committee of the California Manufacturer Association and as a board members of the California State University Foundation. He is an active member of the Aerospace Industries Association and is chairman of the Projects Committee, California State University, Long Beach. He is a past director of New Career Opportunities and the El Segundo Employers' Association.**

**Stephen J. Lukasik**  
**Vice President for Technology**  
**TRW Space & Defense Sector**  
**TRW Inc.**

**Dr. Stephen J. Lukasik is vice president for technology of TRW's Space & Defense Sector. In this capacity, he is involved in a number of assignments dealing with management and technology issues affecting TRW's operations in the space, defense and civil markets.**

**Lukasik joined TRW after extensive experience in industry and government. He has served as Chief Scientist for the Federal Communications Commission and the Rand Corporation and as Director of DoD's Advanced Research Projects Agency (DARPA). Most recently, he was Vice President - Technology for the Northrop Corporation.**

**Steve holds a B.S. in physics from Rensselaer Polytechnic Institute. He received his masters degree and doctorate in physics from the Massachusetts Institute of Technology. He also received an honorary doctorate of engineering from Stevens Institute of Technology.**

**Steve participates in numerous professional activities associated with the federal government as well as colleges and universities. He is a member of the Director for Central Intelligence Science and Technology Advisory Panel, the Joint Strategic Targeting Planning Staff Strategic Advisory Group, and the Chief of Naval Operations Executive Panel. He is presently serving on the Committee on Scientists and Engineers in the Federal Government of the National Research Council; and committees of the Aerospace Industries Association. His work within the educational environment includes membership on the engineering advisory council for the University of California, Berkeley; the Board of Trustees, Harvey Mudd College; Stevens Institute of Technology; and the Los Angeles Educational Partnership Mathematics/Science Council.**

## **Lionel J. Skidmore**

**Dr. Skidmore has over thirty years of experience in the areas of space and missile systems analysis, intelligence analysis, software development, probabilistic and statistical analysis of system performance, multi-source data fusion, operational mission planning, proposal management and preparation, and management of line and project organizations. He has twenty-five years of experience in the collection and use of SCI.**

**Dr. Skidmore is currently the Director of Product Integrity and Engineering for TRW's Systems Integration Group (SIG). He is responsible for SIG's Quality Assurance, Engineering Management, and Project Management activities and is the group's interface with customers in these areas. In executing these responsibilities he manages the Critical Project Review program, reviews project performance with the quality assurance staff, manages the policy compliance audit program, and directs the development and maintenance of the policy manuals and handbooks. He represents SIG on the joint Defense Plant Representative Office (DPRO) and TRW team developing the approach for oversight of TRW's management and engineering systems and processes. He is responsible for developing and presenting the group's approach to the oversight process.**

**Dr. Skidmore reviews the group's Independent Research and Development (IR&D) projects, and reviews and approves the IR&D project plan inputs submitted in SIG's IR&D project plan inputs submitted in SIG's IR&D brochure to the government. His efforts are directed towards improving the quality of the projects, the quality of the reports, and the business relevance of the projects. He coordinates the group's overall IR&D program and is the point of contact to the government for SIG's IR&D Program.**

**The functions of Director of Technology and Chief Engineer are performed by Dr. Skidmore. He identifies and assesses technology transfer and acquisition opportunities. He represents SIG on the TRW/SONY Technology Committee. All public releases of information related to SIG projects and technology efforts, and presented and published papers are approved by him. He represents the group on the Sector's University Contributions Committee and is a member of the Anti-Submarine Warfare Technical Advisory Panel. The committee to select SIG's nominees for the TRW Chairman's Award for Innovation is chaired by Dr. Skidmore and he represents the group on the Sector selection committee.**

**Dr. Skidmore coordinates the group's Total Quality Management Program (TQM) and is SIG's representative on the Sector TQM Steering Group. He initiates, manages, and participates on Sector and Group TQM projects. The group's successful TQM pilot program for per diem reimbursement of travel expenses was directed by him. He is the group's technical and TQM representative to the Sector's Strategic Training Committee.**

**Prior to returning to TRW in 1987 Dr. Skidmore was a Vice President in the Military Sciences and Information Systems Sector of Science Applications International Corporation (SAIC). His duties included management of the Sector's IR&D, Quality Review, and Computer Capital Resources Programs; coordination of multi-group preproposal activities; the writing, management and Red Team review of proposals; the development of procedures and methods for improving the quality of proposals; and technical support on projects. Dr. Skidmore successfully managed SAIC's technical proposal for the Concept Development Phase and the overall proposal for the Full Scale Development Phase of the Afloat Correlation System. Additional responsibilities**

included membership on SAIC's Incentives Committee, which reviewed and recommended company benefits and performance incentives for employees.

He previously was the Manager of SAIC's Defense Systems Division. This division performed requirements analysis for collection management systems, intelligence data exploitation systems and associated training, and intelligence data transmission systems. Mission and utility analyses for special sensors and sensor combinations were performed and simulations were used and modified to support engineering development, testing, and exercises. Dr. Skidmore was responsible for management review of division projects, for providing a management interface to customers, and for overall management of the Falls Church Office.

At TRW he was responsible for managing the Waterwheel Program Office within TRW's Special Programs Organization. Waterwheel's contracts were in the areas of all-source Net Technical Assessment for the defense of Battle Groups against anti-ship cruise missiles for technical support for imaging tasking systems development and integration. Responsibilities included project review, management of the staff, recruiting, new business development, customer interface, proposal management and review, planning and control management, capital requirements determination, budget management and control (overhead, B&P and capital), and operational security management. In addition, he personally managed and performed technical work on the AZOTED contract for a special customer.

In TRW's Defense Systems Business Area he managed the Advanced Systems function. Dr. Skidmore provided customer interface and was responsible for the initiation, development, and management review of contracts and company-funded efforts in the areas of Intelligence Data Handling Systems, Tactical Intelligence Centers, and Special Customer Intelligence Data Systems.

At TRW's Houston Operations, Dr. Skidmore was the manager of the Systems Evaluation Department. He supervised 60 people involved in the engineering development and use of computer programs for performing post-flight analysis, orbit determination, navigation accuracy and procedures studies, mid-course guidance policy studies, and statistical dispersion analysis for the Apollo Program. The post-flight and orbit determination programs fused external radar data, on-board radar and optical data, and inertial guidance data to evaluate the performance of the Apollo vehicles and sensor systems.

At the Aerospace Corporation he supervised and participated in the design, development and use of a modular computer program for the reconstruction of missile flights by fusing telemetry, inertial guidance data and radar data. This program was used for evaluating the performance of missile and satellite hardware and missions. He performed studies to determine the accuracy of estimating the parameters and trajectories of missile re-entry vehicles when various combinations of sensors were used. Updated versions of these programs are still being used in the intelligence community.

While at Hughes Aircraft Company and TRW Space Technology Laboratories, Dr. Skidmore developed and applied analytical and computer techniques. These techniques were used for determining guidance accuracy, fuel requirements and overall probability of success for a number of earth satellite, lunar and interplanetary missions.

**Honors/Awards:**

**TRW Space Technology Laboratories Doctoral Fellowship**

**Howard Hughes Doctoral Fellowship**

**National Science Foundation Fellowship**

**Tau Beta Pi**

**Eta Kappa Nu**

**Sigma XI**

## RESUME

James R. Wells



### EDUCATION:

Bachelor of Civil Engineering- Georgia Institute of Technology-  
1952.

Master of Science in Civil Engineering-Georgia Institute of  
Technology 1954

### MILITARY:

Naval Officer Candidate School, Newport, R. I. 1953

Navy Civil Engineer Corps 1953-1956

Navy Seabees Reserve 1956-1973, Retired Reserve Commander

### PROFESSIONAL:

Registered Professional Engineer, NC & SC

Member of American Society of Civil Engineers

Member of American Society of Mechanical Engineers

Member of American Society for Testing and Materials

Member American National Standards Institute

Member ASME Nuclear Quality Assurance Committee

### COMPANY PROFESSIONAL MEMBERSHIPS:

Edison Electric Institute Executive Advisory Committee on Codes  
and Standards

Edison Electric Institute Codes and Standards Committee ( former  
Chairman)

Edison Electric Institute Quality Assurance Committee ( former  
Chairman)

Edison Electric Institute Nuclear Standards Oversight Task Force

American National Standards Institute Company Member Council

(Vice Chairman)

American National Standards Institute Nuclear Standards Board

### INTERNATIONAL PARTICIPATION:

IAEA Mission to the Philippines to assist in Quality Assurance  
for their nuclear power plant- 1980

Argonne National Laboratory training session in Quality Assurance  
for underdeveloped countries-1983

IAEA training session in Quality Assurance in Cairo, Egypt 1984

Advisory Group Meeting on QA at IAEA offices in Vienna 1987

IAEA training session in QA for Management, Cairo Egypt 1988

IAEA training session in QA in Peoples's Republic of China 1989

Advisory Group Meeting on QA at IAEA offices in Vienna 1989

IAEA training session in QA in The Republic of Korea 1989  
Advisory Group Meeting on QA at IAEA offices in Vienna 1990  
IAEA training session in QA in The Republic of Indonesia 1990

**WORK EXPERIENCE:**

January 1989- Present (Dec 1991)

) Independent Consultant in Quality Assurance Matters. Examples of the work include consultant to three law firms in QA and Licensing matters for utilities, assisting the US Department of Energy in setting up their QA program for the New Production Reactor Program, and working for the International Atomic Energy Agency in Quality Assurance matters.

1957- January 1989      DUKE POWER COMPANY, CHARLOTTE, N.C.

All of my professional work experience until my retirement in January 1989 had been with Duke Power Company. I worked for seventeen years in the Construction Department involved in the construction of fossil, hydro and nuclear generating plants. I then developed the first nuclear quality assurance program for Duke and managed the Department for eight years. The last seven years was spent in Industry activities involved in the quality assurance program of other utilities in the United States and abroad. Below is a summary of these activities.

Feb 1982- August 1983

On assignment at the Institute of Nuclear Power Operations in Atlanta, Ga. During my period at INPO I assisted in the development of the Construction Project Evaluation Program for nuclear plants under construction. I was the Department Manager for the Design Department and participated in the evaluation of twelve nuclear plant under construction.

June- August 1984

Managed a group of 21 Duke Power personnel on a construction evaluation of the Fermi 2 nuclear power plant for Detroit Edison Company

January 1985

Managed a group of five Duke Power personnel on a contract to Detroit Edison Company to evaluate their design effort.

February 1985

Managed a group of five Duke Power personnel on a contract to Pennsylvania Power and Light Company to assist them in the

transition of their QA Program from the construction phase to the operations phase at their Susquehanna Nuclear Power Plant.

March 1985- June 1987

On a contract to Texas Utilities in Dallas, Texas as the Quality Assurance Director. This involved the management of the Quality Assurance Department for the Comanche Peak Nuclear Station. There were more than 400 people in the QA Department. This task involved the complete revision of the QA Program. During this period I was Chairman of the Overview Quality Team to advise on QA matter in the reevaluation of the design and construction of the plant.

August 1987- October 1988

On contract to Iowa Electric Light and Power Company in Cedar Rapids, Iowa to assist this company in the complete rewrite of their QA program. This involved meeting with QA management and senior management on a bi-weekly frequency for about 15 months.

November 1987- February 1988

On contract to Middle South Utilities for an assessment of their Quality Assurance program. This involved about seven people advising the management on ways to make the QA Department more effective.

May 1988- October 1988

On contract to Steir, Anderson, and Malone, Attorneys assisting in the evaluation of quality problems at the Wolf Creek Nuclear plant.

February 1974- February 1982

Corporate Quality Assurance Manager for Duke Power Company. In this role I developed and managed the first nuclear QA program for the Company. During this period I was responsible for the development of the QA program and gaining acceptance by the Nuclear Regulatory Commission. It was also during this period that I had responsibility for obtaining the first ASME N Stamp for the Company. The QA Department consisted of about 450 persons. The QA Department was responsible for the QA of design, construction, startup and operation of seven nuclear units with a total capacity of about 7300MW.

December 1971- February 1974

Manager, Construction Services. In this role I was the principal technical assistant to the Vice President of Construction for Duke Power. During this period Duke was involved in the

**Resume of James R. Wells (cont'd) Page 4**

**construction of seven nuclear plants, two 1100MW fossil plant and 2 hydroelectric plants.**

**January 1971-December 1971**

**Assistant Project Manager at McGuire Nuclear Plant. During this period I was in charge of all construction activities for the construction of two 1150 nuclear plants.**

**November 1966- January 1971**

**Principal Field Engineer at Oconee Nuclear Station. I was in charge of all field engineering and quality control at the three unit Oconee Nuclear Station.**

**July 1957- November 1966**

**Assistant Office Engineer involved in the construction of coal fired and hydroelectric generating stations.**

**RAYMOND W. GODMAN**

**CURRENT EMPLOYER:**  
**TRW Environmental Safety Systems Inc.**

**CURRENT POSITION:**  
**Assistant General Manager, Operations**

**EDUCATION:**  
George Washington University, 192-1965, Operations Research, MEA, 1965  
University of Maryland, 1956-1960, BSEE, 1960  
Massachusetts Institute of Technology Seminar XXI

**CURRENT RESPONSIBILITIES:**  
The AGM, Operations reports directly to the M&O General Manager and is responsible for NWMS project development, M&O planning and control and M&O administration. His major function is to direct the day-to-day activity of the NWMS project design program implementation. As manager of Operations, he implements the technical baseline and provides management controls and information systems support for the M&O.

**RELATED EXPERIENCE:**

**TRW Federal Systems Group**

<b>Manager, Command Projects</b>	<b>1983 -1991</b>	<b>John P. Stenbit/ (703) 968-1700</b>
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**Type and Number of Employees Supervised**  
1,000 managers, professional, technical, and support personnel.

**Summary of Responsibilities and Major Accomplishments**  
Top Manager on government programs that provide advanced technology capabilities to the Federal Government, and has annual revenues that exceed \$100 million. Under his direction, the projects within the program have accomplished every critical milestone. Initially assigned as Deputy Program Manager and principal customer interface, he became Program Manager after 1 year. Character of the program is that schedules and requirements are established politically and that their successful accomplishment requires multiple government agency cooperation. Because of severe schedule pressure, is constantly required to adjust objectives to fit within inflexible initial milestones and create plans for satisfying all objectives in the most expeditious and cost-effective manner.

Assigned to the program during the critical startup phase and obtained initial staff, created initial baselines (technical, schedule, cost), and defined program objectives and requirements. Directed requirement definition, system specification, design, prototype, first article, production, deployment, operation and maintenance, and logistics support and training. The staff of this program comes from nine TRW divisions located in four

different Groups. Work is performed in many locations in the continental United States.

The system was developed using the "evolutionary" development process, a process where operational concepts and system requirements are developed in parallel with system development and deployment. Command Projects successfully utilized the bicameral organizational concept proposed for use on the TRW OCRWM SEDM program.

### **TRW Defense Systems Group**

Huntsville, Alabama  
Site Manager

1980-1983

Jack M. Dreyfus/  
(703) 876-8200

**Type and Number of Employees Supervised**  
200 professional, technical, and support personnel.

#### **Summary of Responsibilities and Major Accomplishments**

As the General Manager of this facility, efforts led to tremendous growth and the creation of a major site with a stable base of business. Created business development plans and planned and constructed a new 40,000 square foot advanced engineering and software development building to house an engineering staff of 250. Business included contracts with NASA and the Army to perform system engineering and data processing system development. Under his leadership during 3-year period, the site grew from a 35-person group with \$1 million in annual sales to a 200-person organization with \$20 million in annual revenues.

Manager, Communications  
Systems Laboratory

1977-1983

Dr. James R. Larkin/  
Retired

**Type and Number of Employees supervised**  
150 professional and technical personnel.

#### **Summary of Responsibilities and Major Accomplishments**

As manager of the primary functional organization of the TRW operating unit in Washington, managed employees with technical skills in command, control and communications (C<sup>3</sup>), and signal analysis. Performed on contracts for the Defense Communications Agency (DCA) and the U. S. Navy. Also oversaw the San Diego office which provided engineering support of the Navy's Ocean Systems Center. During a 3-year period, the business base tripled and the staff doubled in size.

**Director,  
Special Programs**

**1974-1977**

**Dan Scally/  
(213) 535-1796**

**Type and Number of Employees Supervised**  
25 professional and technical employees.

**Summary of Responsibilities and Major Accomplishments**

Managed a high-level study and analysis team working on very sensitive intelligence of foreign systems and their interaction with U.S. systems. During his tenure, there were several intelligence breakthroughs pertaining to the missile threat to U. S. Naval forces.

**U. S. Navy, Office of chief of Naval Operations**

**Chief Analyst**

**1967-1974**

**Arthur Pennington/Retired**

**Type and Number of Employees Supervised**  
15 military and civilian employees, 100 contractor analysts.

**Summary of Responsibilities and Major Accomplishments**

Held positions of increasing responsibilities during 8 years in the System Analysis Division, Chief of Naval Operations (CNO), the last 5 as Chief Analyst for Tactical Forces (GS-16). Directed many studies that required interaction with the Office of the Secretary of Defense. The studies covered important issues, including: type, number, and mix of all types of surface ships; trade off studies on nuclear vice fossil fueled surface fleet; weapons complement and power plan for submarine force; and Navy strategy for ocean surveillance.

**Vitro Corporation**

**Section Head and Test Engineer (1960-1967)** for a group responsible for system analysis of the POLARIS and POSEIDON nuclear submarines weapon systems.

**PROFESSIONAL REFERENCES:**

1. **Dr. James R. Burnett, Vice President and Assistant General Manager, Space and Defense Sector, One Space Park, Redondo Beach, CA 90278, (213) 536-1776**
2. **Edwin A. Goldberg, Vice President and General Manager, Electronic Systems Group, One Space Park, Redondo Beach, CA 90278, (213) 535-1004**
3. **Dr. James Carlson, Former Director, BMD Advanced Technology Center, Huntsville, Al (205) 721-6400.**

## **Daniel B. Flournoy**

### **Education:**

**B. S. Chemistry, Auburn University, 1965**

**M. S. Logistics Management (with Distinction), Air Force Institute of Technology, 1971**

### **Senior Staff Engineer, TRW-TESS**

After a distinguished Air Force career of 26 years, during which he attained the rank of Colonel and occupied positions of increasing responsibility, Mr. Flournoy joined TESS in August 1991. He is the Senior Staff Engineer to the Assistant General Manager for Operations. His Air Force experience in guiding a new organization through a highly successful DoD initial nuclear surety inspection as well as two follow-up inspections is being used to assist the NWMS M&O in completing its initial Readiness Reviews.

### **April 1988 to May 1991**

**Commander, Aerospace Guidance and Metrology Center, Newark AFB, Ohio**

Ultimate responsibility for the Center's mission: depot level repair of inertial guidance systems for all Air Force missiles and aircraft. Also the single manager for the Air Force Metrology and Calibration Program. 2,600 personnel and annual budget of \$190 million.

### **May 1986 to March 1988**

**Commander Det. 60, Ogden Air Logistics Center, F. E. Warren AFB, Wyoming**

As first commander, established and directed organization mission: on-site depot support of Peacekeeper missile at the Strategic Air Command (SAC) base, including the missile, reentry system, and special purpose vehicles. Directed refurbishment of 200 Minuteman missile launch facilities. Commanded 200 personnel.

### **May 1985 to April 1986**

**ICBM Systems Manager, Hill AFB, Utah**

Single manager for logistics support of Air Force ICBMs-Minuteman and Peacekeeper. Engineering authority for all system changes. Accomplished long range planning and budgeting for system support and modernization. Executed approved upgrade programs (\$2.5 billion). 450 personnel.

### **July 1982 to April 1985**

**HQ USAF Staff Officer, Washington, DC.**

HQ USAF manager for ICBM logistics. Articulated requirements in the DoD budgetary process for ICBM reliability and maintainability programs. Wrote program management directives for approved programs. Established policy and procedures for ICBM logistics matters.

### **August 1981 to June 1982**

**ICAF Student, Washington, DC**

Student in the Resident Industrial College of the Armed Forces program - The DoD Logistics Executive Development Course.

### **July 1978 to July 1981**

**Missile Career Management Staff Officer, Randolph AFB, Texas**

Managed the Missile Maintenance and missile Operations Officer career fields - approximately 5,000 officers. Responsible for officer duty assignments and career development. Accomplished long range planning for personnel requirements for developing weapon systems.

**August 1977 to June 1978**

**Student, Maxwell AFB, Alabama**

**Student in the Resident Air Command and Staff College program - The Air Force Staff Officer Development Course. Distinguished graduate.**

**June 1974 to July 1977**

**HQ SAC Staff Officer, Offitt AFB, Nebraska**

**Responsible for the direction of the maintenance of the 150 Minuteman missiles at Whiteman AFB, Missouri, by a continuously manned control center. Directed the execution of scheduled maintenance, schedule changes, and emergency response.**

**June 1970 to July 1971**

**Student, Wright-Patterson AFB, Ohio**

**Student, Air Force Institute of Technology. Received Master of Science degree in Logistics Management. *Graduated with Distinction.***

**December 1965 to May 1970**

**Missile Operations Office, Grand Forks AFB, North Dakota**

**Served as a crew member on a Minuteman missile launch control team, including instructor crew duty.**

## **S. Martin Cummings**

**As the TRW Manager, Records Management and Document Control Department, Mr. Cummings is responsible for records management and document control activities for M&O contractor in support of the Nuclear Waste Management System, Department of Energy. He provides administrative and technical direction to records personnel in three states and the District of Columbia. His responsibilities include cost, schedule, and management of all department activities. He has developed and implemented multiple procedures and plans.**

**As a TRW Section Head/Subprogram Manager, Technical Information and Data Management, Mr. Cummings was responsible for schedule, budget, performance, quality, configuration management, and support to new business pursuits. He provided administrative and technical direction to 20 personnel. Mr. Cummings conceptualized and developed TRW's East Coast Technical Information Center (TIC), a resource center responsible for program and project data management systems and documentation support. He managed the research acquisition, storage, and retrieval of all automated and hard copy source data for multiple programs and oversaw the development of several core manuals, including the Policy and Requirements Manual. Mr. Cummings supported major TRW proposals, providing expertise on data management systems. On the Nuclear Waste Management System Proposal he was responsible for the Information Management System (IMS), Licensing Support System (LSS), and documentation production.**

**Mr. Cummings has been the project data manager for a major defense contract having a total value of more than 100 million dollars. He has established systems for and directed the development, production, management and delivery of project technical information and contract-related data requirements. He configured, implemented, and managed a streamlined data development and review system that monitors issues, commitments, action items, and correspondence control. He established, monitored and controlled documentation standards and classified material control in accordance with contract requirements and company identity. He established schedules and priorities, and directed cost-effective data production methods and tracked expenditures. He successfully applied tailored information-management techniques and methodologies to centrally manage project-specific policies, standards, procedures and practices. He was responsible for forecast budget, capital, space and manpower resource requirements.**

**Mr. Cummings was confidential assistant and protocol advisor to the Deputy Chief of Staff for Research, Development and Studies Division while active in the United States Marine Corps. He scheduled, organized and coordinated political, business and social functions for a Marine general officer. In the RDT&E phase, assisted development coordinators in their liaison mission with program managers, sponsors and defense contractors in managing state-of-the-art defense systems for Marine Corps acquisition to include policy and budget formulation and execution. Supervised the administration and security of this division of senior military and civilian officials and directly supervised 15 military and civilian personnel. Responsible to the commanding officer for assignments and personnel policies affecting over 2500 military and civilian personnel including records management and Top Secret document control activities.**

**Memberships: Nuclear Information and Records Management Association (NIRMA), American Records Management Association (ARMA), Society of Logistics Engineers, American Defense Preparedness Association.**

**Robert Alexander Morgan**  
**Quality Assurance Operations Director**  
**Duke Engineering and Services, Inc.**

Mr. Morgan is responsible for the management of Quality Assurance (QA) activities on the Nuclear Waste Management System (NWMS) for the Management and Operating (M&O) contractor. He provides QA management support to the Assistant General Manager, Operations for TESS Inc. by directing the quality engineering and QA administrative interfaces.

As the QA Director of Operations for Duke Power at the Oconee Nuclear Station, Mr. Morgan's responsibilities included supervising managers in the quality engineering, inspection, NDE testing, surveillances and human resources departments.

Mr. Morgan was the QA Manager for the Duke Power Bad Creek Project and was responsible for supervising quality control inspection supervisors which included activities relating to soils, concrete and underground powerhouse tests and inspections.

Mr. Morgan was the project QA engineer for Duke Power Company at Catawba Nuclear station. He was responsible for managing the site QA program functions. He was responsible for supervising the quality engineering functions which specified the regulatory program requirements. In addition, he also supervised the surveillance manager who provided QA program overviews and the QA records supervisor who was responsible for final review and disposition of QA records.

Mr. Morgan was a design engineer in the structural analysis group at Duke Power's engineering department. He prepared design/bid specifications and developed structural designs for McGuire and Catawba nuclear stations.

At Duke Power's Oconee Nuclear station, he provided engineering support to the field crews for the erection of NSSS components and other reactor building structural areas. He also supervised the document control, calibration, receiving inspection, fire protection and corrective action programs.

Mr. Morgan graduated from Virginia Polytechnic Institute in 1970 with a BSCE. He is a registered Professional Engineer in both North and South Carolina and is an active member in both ASME and ANS.

ROBERT M. SANDIFER

DUKE ENGINEERING & SERVICES, INC.  
P. O. BOX 1004  
CHARLOTTE, NC 28201-1004

EDUCATION & TRAINING

University of South Carolina, BSME, 1961  
Various Management and Technical Training Courses - Duke Power

PROFESSIONAL AFFILIATIONS & CERTIFICATIONS

Registered Professional Engineer: NC - 6894  
SC - 5752  
KY - 14492

WORK EXPERIENCE

SUMMARY

30 years of diversified management, supervision, and design experience on key projects for all of Duke Power's nuclear stations, non-nuclear facilities, and other clients. He has managed a multiple project organization which consisted of multidiscipline project teams responsible for complete design of several major electric generating facilities. He has managed a multidiscipline project organization responsible for the design and construction of a 1000 MW pumped storage hydro facility. He has coordinated and led executive management consulting team efforts for a wide variety of utility projects. He was founding Chairman of Duke Power's Nuclear Plant Life Extension Committee, where he coordinated a diverse group of senior level managers in undertaking appropriate technical and licensing actions to ensure Duke is able to extend the license of its seven operating reactors. He is currently a Senior Manager in Duke Power's Design Engineering Department responsible for all mechanical, nuclear, and chemical engineering support of Duke's Catawba Nuclear Station with its two 1145 MWe reactors. He has extensive design and management experience on projects involving instrumentation and control/process computer application development for commercial fossil generation facilities and piping system design/layout, mechanical systems/equipment engineering HVAC engineering, fire protection engineering, and nuclear engineering for commercial nuclear power facilities. He has a proven record of effectively managing multiple tasks and projects, consistently meeting deadlines, responding positively to client needs, and delivering products of uniformly high quality. He has successfully coordinated and managed projects requiring creativity, decisiveness, and responsiveness on demanding short-term schedules. He has demonstrated exceptional organizational and interpersonal skills. He has consistently demonstrated his ability to meet deadlines and deliver cost

RESUME  
ROBERT M. SANDIFER  
PAGE 2

WORK EXPERIENCE

<u>FROM</u>	<u>TO</u>	<u>TITLE</u>	<u>COMPANY</u>
11/88	Present	Engineering Manager	Duke Power Company

-effective products with uniformly high quality on numerous projects. He has managed key resources and elements for all seven of Duke Power Company's nuclear reactors spanning the period 1969-1991, and is thoroughly familiar with INPO, NRC, and industry codes regulations, and requirements.

Responsible for managing all corporate mechanical, chemical, and nuclear engineering in support of the Catawba Nuclear Station. This responsibility includes primary and secondary systems engineering, mechanical equipment specification, coordination of operability evaluations, HVAC engineering/design, piping engineering, criticality analyses, shielding analyses, accident dose consequence analyses, and safety evaluations of all station modifications.

Responsible for managing and performing numerous consulting studies in support of Duke Engineering and Services, Inc. These studies typically last one to four months and involve a multidiscipline team ranging in size from four to seventeen members. Normally, the issuance of a final report and an executive presentation conclude the study. These projects include the following:

New Hampshire Yankee/Seabrook Nuclear Station - Assessment of actual design and construction staffing versus Duke Power Company's staffing experience in designing and constructing nuclear units.

TVA/Shawnee AFBC Project - Adequacy assessment of the existing balance of plant equipment which was to be matched with the new atmospheric fluidized bed combustion boiler.

Los Angeles Department of Water & Power/Design Drafting Section - Development of all the available options to decentralize the design drafting function along with an advantages/disadvantages assessment.

Centerior Energy Corporation/Davis Besse Nuclear Station - Development of an operating and maintenance budget which was in compliance with the client's target. Developed a strategy to take the plant from current budget to the target budget.

WORK EXPERIENCE

<u>FROM</u>	<u>TO</u>	<u>TITLE</u>	<u>COMPANY</u>
<p>Niagara Mohawk/Nine Mile Point 2 - Developed the options available and the associated costs with separating Unit 2 from Unit 1 both from a physical as well as a personnel standpoint.</p>			
<p>Washington Public Power Supply System/WPPSS Unit 2 - Assessment of the organization and staffing of the engineering organizations.</p>			
<p>Northeast Utilities/Seabrook Nuclear Station - Independent assessment of Northeast Utilities operating and maintenance cost projections.</p>			
<p>Westinghouse/DOE, FFTF, Hanford - Operating and maintenance comparison with commercial nuclear generation facility.</p>			
9/87	11/88	Principal Engineer	Duke Power Company
<p>Responsible for managing a multidiscipline engineering project team charged with the design a four unit 1000 MWe pumped storage facility in western South Carolina. This team consisted of civil, mechanical, electrical, and project management personnel who performed all of the engineering functions for the plant. Responsible for support (including site assigned personnel) of construction, check-out, and start-up activities. Also responsible for supporting the Consulting Board in the periodic status meetings and information exchange required for the independent engineering review by the Board as specified by FERC.</p>			
11/86	9/87	Principal Engineer	Duke Power Company
<p>Responsible for managing multidiscipline project groups charged with the design responsibility for client projects. This included an atmospheric fluidized bed combustion facility for TVA, a cogeneration plant for the U.S. Army at Fort Drum, and multiple cogeneration plants for Cogentrix of North Carolina. These groups consisted of all the multidiscipline personnel necessary for performing the total design function of their respective projects. Also responsible for client interface and reporting. Each project group was responsible for participating in the check-out and start-up of their respective plant up to client turnover. Also responsible for coordination</p>			

WORK EXPERIENCE

FROM                      TO                      TITLE                      COMPANY

and management of fossil life extension studies for Duke Power and outside clients.

10/81                      11/86                      Principal Engineer                      Duke Power Company

Responsible for managing over 150 engineers and designers charged with the mechanical design activities associated with the construction and operations support of commercial nuclear generating facilities. This included McGuire Nuclear Station (two 1150 MWe reactors), Catawba Nuclear Station (two 1145 MWe reactors), and the later canceled Cherokee Nuclear Station (three units of 1300 MWe each). This section was responsible for the design of pressure piping and plant modeling of these facilities. Also responsible for engineering and design of HVAC systems, fire protection systems, and station services for these plants. Responsible for project engineering/management for construction, testing, start-up, and turn-over on Duke Power Company's McGuire and Catawba Nuclear Stations. Responsible for the coordination and management of fossil life extension studies for Duke Power company.

1/74                      10/81                      Senior Engineer                      Duke Power Company

Responsible for managing the group responsible for the design of pressure piping, plant modeling; and the design, specification, and procurement of process instrumentation and controls of all new stations. This included the completion of the design activities associated with the Oconee NSSS and BOP fluid systems. This group initiated the above design scope on the McGuire and Catawba Nuclear Stations.

8/66                      1/74                      Design Engineer                      Duke Power Company

Responsible for the design and procurement of process instrumentation and controls for all new stations. This group initiated the above design scope for the Belews Creek Fossil Station and Oconee Nuclear Station. This included functional confirmation of the Oconee NSSS systems as well as BOP process instrumentation control loops.

RESUME  
ROBERT M. SANDIFER  
PAGE 5

WORK EXPERIENCE

<u>TO</u>	<u>FROM</u>	<u>TITLE</u>	<u>COMPANY</u>
4/62	8/66	Assistant Design Engineer/Engineer Associate	Duke Power Company

Participated in the development of concepts and implementation techniques for Duke Power's first process control computer at Marshall Steam Station. This computer system successfully served the station for twenty years, providing both control and plant monitoring functions.

6/61	4/62	Junior Engineer	Duke Power Company
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Performed miscellaneous duties associated with the preparation of electrical elementaries.

## **Peter D. West**

### **Education:**

**B.S. Mathematics, University of North Carolina, 1963**  
**A.B. English, University of North Carolina, 1963**  
**M.S. Computer Science, George Washington University, 1971**

### **Senior Project Engineer, TRW-TESS**

**Mr. West has over twenty six years of experience related to the design, development, integration, and testing of ADP based command centers and support software.**

### **July 1991 - Present**

#### **Sr. Project Engineer, Requirements and Licensing Group, TESS**

**Mr. West is presently responsible for the primary management activities of the R & L Group (budget, schedule, and statement of work). He initiated and implemented the R & L Group QAW readiness activities and is participating on the ES&H working group to develop the DOE Safety and Health Five-Year Plan. Additionally he is developing the requirements for the Automated Requirements Management (ARM) System in support of the Regulatory Compliance activities.**

### **1990 - July 1991**

#### **Sr. Project Engineer, Chicago O'Hare Airport Command Center, TRW**

**Mr. West is presently a Sr. Project Engineer for the Chicago O'Hare Airport Safety and Security Project. He is responsible for the development of the Concept of Operations, the Functional Design, and the Detail System Design for the Dispatch Component of the project. This system employs 16 Intergraph dispatch consoles, radio consoles, the public address system, and the recording systems to monitor and dispatch the Fire, EMS, Police, Security and Operations forces at the O'Hare Airport. He is responsible for monitoring and review of the Intergraph subcontract to TRW and other management functions associated with the dispatch component. As a collateral duty he is the project safety officer and developed a Project Safety Plan.**

### **1989 - 1990**

#### **Sr. Project Engineer, Army AWIS Project, TRW**

**Mr. West served as a Project Engineer on TRW's AWIS Project for the Army. In this position he was responsible for the transition planning for the delivery of the Crisis Operations software module which was deployed to a European command center. On this project he was given several special assignments: one to manage the integration and installation of fourteen computers to the Army's Site Commanders Conference.**

### **1988 - 1989**

#### **Deputy Project Manager, ACM Project, TRW**

**Mr. West was the Deputy Project Manager for Operations for the ACM Project at TRW. In this capacity he was responsible for project budgets, schedules, staffing, SCIF facilities, security, ECPs, and day to day operation of the project. The project developed software for a restricted intelligence application on SUN and Microvax hardware and had approximately forty staff members.**

### **1984 - 1988**

#### **Project Manager, ASAS Project, TRW**

**Mr. West was Project Manager of TRW's ASAS/ENSCE project from its start in 1984 until 1988. He managed the winning proposal, the Phase I \$700K contract, and the \$16M**

Phase II contract from SRR through the code and test phase. The project, which was a subcontract to JPL, was to develop the software for the Intelligence Collection Management subsystem of the ASAS System and to support the system integration.

**1981 - 1984**

**Deputy Project Manager, CAMS Project, TRW**

Mr. West was the Deputy Project Manager on the CAMS 2 Project for three years during which time he was responsible for software test, training, configuration management, and transition planning.

**1978 - 1981**

**Department Manager, TRW**

Previous to his assignment on the CAMS 2 Project, Mr. West was manager of the Software Development Department of the Data Systems Lab. The department had 75 software developers working in the areas of data management systems, display technology (MMI), GIM DMS systems programming, and scientific programming.

**1976 - 1978**

**Project Manager, NCI Project, TRW**

Between assignments as department manager, Mr. West was project manager of the National Cancer Institute's Management Information System. This was a several million dollar, multi-year project to develop a management information system for different divisions within the NCI and to integrate those division systems for upward reporting to the office of the NCI director.

**1974 - 1976**

**Department Manager, TRW**

Mr. West managed the Information Systems Department which was chartered with the development of data management systems software, information systems requirements, applications of TRW's GIM information system, and other information systems work in the Washington Operations. The department size was approximately fifty.

Mr. West has over ten years of additional experience in software design, development, and applications including work experience in data management systems, machine language programming, teaching programming, systems design, and systems analysis.

Outside TRW, Mr. West is the Volunteer Chief of the Fair Oaks Volunteer Fire Department, a Volunteer Battalion Fire Chief in Fairfax County.

**R. GLENN VAWTER**

**BUSINESS EXPERIENCE**

**Feb 1991 to Present - TESS, Inc.**

Served as Manager MGDS Liaison for subsidiary of TRW providing contract services to the U.S. Department of Energy in the area of nuclear waste disposal. Interfaced with senior management of TESS and DOE and served on senior staff of AGM Operations.

**Nov 1989 to Feb 1991 - TMM Services**

Served as President of a consulting company providing governmental affairs, technology, management and marketing services to industry and government. Principal clients included a major energy company and a foreign government. Supervised up to 22-contractors/consultants, administered contract with the Department of Energy and conducted monthly participants meetings. Served on expert energy panel for the Kingdom of Morocco and advised a contractor to U.S.A.I.D.

**1986 to Nov 1989 - Western Research Institute**

Initially served as Technology Development Division Director. Then promoted to Vice President of Business Development and set up an office in Washington, D.C.

**1983 to 1986 - Management Consultant**

Provided government liaison, technical and management consulting services to business. Principal client was Peter Kiewit Sons'. Assisted in the application to a federal government agency for \$65 million project and served as project director. Prepared a business plan for a forestry client. Also assisted in organizing a mining company.

**1964 - 1983 Tosco Corporation**

Advanced from project engineer to senior vice president of a Fortune 200 firm, and became president of a its technology development subsidiary. Responsible for the commercialization and licensing of technology. Had overall responsibility for two commercial development projects. Negotiated agreements, approved and controlled budgets and coordinated with the Board of Directors. Served as senior liaison on a joint venture project with Exxon. Served as key liaison to agencies of the federal government and two states.

1960 -1964 - Marathon Oil Company

Served as field petroleum engineer after one year training program. Then served as gas plant engineer near Taft, California.

EDUCATION

Colorado School of Mines - B.S. Petroleum Engineering - 1960  
Eight Hours toward a Masters Degree  
Denver University - Business Law Courses - 1965  
Harvard Business School - Advanced Management Program - 1977

MILITARY

Captain, U.S. Army Corp of Engineers - Reserves - 8 years

AFFILIATIONS

Professional Engineer, States of Colorado and Utah  
Member, AICHE and SPE of AIME  
Member, Harvard Business School Club  
Member, Council on Alternate Fuels  
Member, Washington Coal Club

PERSONAL

  
Excellent Health  
Hobbies include travel, computer, skiing and outdoor sports  
References available upon request

HONORS

Chairman, Rocky Mountain Oil and Gas Association Committee - 1980  
Section Head, United Way Campaign, Denver, Colorado - 1982  
Steering Board, Colorado School of Mines Research Institute - 1979  
Town Councilman, Grand Valley, Colorado - 1967  
College Honors  
President, Society of Petroleum Engineers  
Sigma Gamma Epsilon  
Kappa Kappa Psi  
Scabbard and Blade  
Press Club

PUBLICATIONS AND PATENTS

Author and/or co-author of over twenty technical/advocacy papers.  
Co-author of chapters in two books. Awarded three patents.

**ATTACHMENT 6.2**

**TASK MATRIX**

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
		<b>1.2.1 SYSTEMS</b>						
1	1.2.1.1	Management and Integration		X				
2	1.2.1.2.1	<p>Update and review the Systems Requirements and systems description documents.</p> <ul style="list-style-type: none"> <li>• Perform requirements analyses and calculations in support of interpretation, decomposition and allocation of requirements.</li> <li>• Update and formally review the SR to support ACD.</li> <li>• Update and formally review the SD to reflect the results of Title I ESF design.</li> </ul>	D			3	Bodnar	McNeish, J. Abhold, M.
3	1.2.1.2.2	<p>Systems Studies. Maintain the system study register in accordance with the requirements of the OCRWM Program SEMP and YMP SEMP.</p> <ul style="list-style-type: none"> <li>• Establish M&amp;O procedures for the maintenance of the system studies register (system studies list, system studies abstracts, system studies reports)</li> <li>• Review and update the System Studies Plan.</li> <li>• Assist in formation of decision-making evaluation group.</li> <li>• Generate a prioritized decision list with input from SEEG, Program SSP and YMP participants.</li> <li>• Generate/maintain appropriate registers.</li> </ul>	F    A  E			5   3  3	Abhold, M.	McKinney, G. Abhold, M.
4	1.2.1.2.3	Total system Life Cycle Cost (TSLCC).			X			

## TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
5	1.2.1.2.4	<p>Develop the technical elements of the YMP baseline in accordance with the YMP SEMP. Review Systems Study reports. (M&amp;O)</p> <ul style="list-style-type: none"> <li>• Develop YMP technical requirements documents; identify functions, physical subsystems, allocate requirements.</li> <li>• Perform requirements analyses and calculations in support of interpretation, decomposition and allocation of requirements.</li> <li>• Assist YMP in conducting formal reviews of the technical elements.</li> <li>• Assist YMP in revising and maintaining YMP SEMP.</li> </ul>	D	X		3	Bodnar, S.	McNeish, St. Clair, Fortsch, M. Abhold, Saunders
6	1.2.1.2.5	<p>Review and coordinate document updates. Provide Configuration Management (CM) to implement and maintain technical baseline.</p> <ul style="list-style-type: none"> <li>• Provide configuration management to implement and maintain integrated management and technical baseline for YMP.</li> <li>• Support administration of Interface Control Working Group.</li> <li>• Prepare and provide YMPO with periodic reports of configuration status.</li> <li>• Prepare M&amp;O CM procedures.</li> <li>• Develop and update YMP CM plan.</li> <li>• Support the project change control process.</li> </ul>	F	X	X	5	Bodnar, S.	Jiu, Dokozoguz, Clark Goodman, Fortsch

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
7	1.2.1.2.6	<p>Support functional analysis of programmatic and physical system of NWMS. Prepare technical requirements.</p> <ul style="list-style-type: none"> <li>• Provide support to OCRWM and YMPO in performing functional analysis of the programmatic and physical systems of the NWMS. Document as Study Reports.</li> <li>• Provide support to assist in the preparation of technical requirements and management controls for OCRWM and YMPO</li> <li>• Participate in MSIS working groups.</li> <li>• Assist YMP in conducting formal reviews of functional analyses.</li> <li>• Provide support to assist YMPO to transition the lead for technical management of MSIS from T&amp;MSS to the M&amp;O</li> </ul>		<p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p> <p style="text-align: center;">X</p>			Bodnar, S.	Abhold, H.
8	1.2.1.3.3	<p>Continue RIB Data Base development; develop transition plan.</p> <ul style="list-style-type: none"> <li>• Prepare M&amp;O procedures for RIB development and update.</li> <li>• Develop, administer and update the RIB through configuration management procedures.</li> <li>• Generate and distribute RIB update page sets.</li> </ul>	F	<p style="text-align: center;">X</p> <p style="text-align: center;">X</p>		5	Pahwa	Gauthier
9	1.2.1.3.5	<p>Review, edit and disseminate quarterly data catalog. Develop tracking system procedures. Manage ATDT System.</p> <ul style="list-style-type: none"> <li>• Develop tracking system procedures.</li> <li>• Manage the ATDT system.</li> </ul>	F	<p style="text-align: center;">X</p>		5	Pahwa	Gauthier

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
9		<ul style="list-style-type: none"> <li>• Update and maintain the ATDT system.</li> <li>• Review, edit, and disseminate the quarterly data catalog.</li> <li>• Support Technical Data Working Groups for parameter normalization.</li> <li>• Support Technical Data Base Parameter Dictionary development</li> </ul>		X				
10	1.2.1.4.1	Total systems performance assessment.		X				
11	1.2.1.4.1.2	Develop criteria for MGDS PA models. Review PA Analysis. <ul style="list-style-type: none"> <li>• Evaluate waste package performance assessment models.</li> <li>• Manage and integrate waste package performance assessment efforts.</li> <li>• Assist YMP in conducting formal reviews of waste package evaluation report.</li> </ul>		X				
12	1.2.1.4.1.3	Review and evaluate MGDS performance assessment models.		X				
13	1.2.1.4.2	Evaluate Waste Package (PA) Codes. Submit evaluation report (06-04 or M&O).			X			
14	1.2.1.4.6	Development and validation of flow and transportation models.		X				
15	1.2.1.4.9	Development and verification of flow and transport codes.		X				
<b>1.2.2 WASTE PACKAGE DEVELOPMENT</b>								
16	1.2.2.1	Management and Integration for EBS.		X				
17	1.2.2.3.1	Develop/implement test plans related to waste form testing. <ul style="list-style-type: none"> <li>• Manage/integrate spent fuel and glass waste form testing.</li> </ul>	A			3	Benton	Fish, Stahl

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
17		<ul style="list-style-type: none"> <li>• Evaluate existing, develop new test plans.</li> <li>• Assist YMP in conducting formal reviews of Waste Form</li> <li>• Implement test plans related to waste form testing. Characterization Reports.</li> </ul>	D	X  X		3		
18	1.2.2.3.2	<ul style="list-style-type: none"> <li>Provide input to EBS design concepts for metal barriers.</li> <li>• Provide input to the Engineered Barrier System design concepts; perform calculations and analyses.</li> <li>• Document inputs to EBS design concepts.</li> <li>• Provide materials evaluations for decision making on EBS concepts.</li> <li>• Assist YMP in conducting formal reviews of EBS design concepts.</li> </ul>			X	3  3	Benton	Fish, Stahl
19	1.2.2.3.3	<ul style="list-style-type: none"> <li>Provide input to EBS design concepts for other materials.</li> <li>• Provide input to the Engineered Barrier System design concepts; perform calculations and analyses.</li> <li>• Document inputs to EBS design concepts.</li> <li>• Provide materials evaluations for decision making on EBS concepts.</li> <li>• Assist YMP in conducting formal reviews of EBS design concepts.</li> </ul>			X	3  3	Benton	Fish, Stahl

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
20	1.2.2.3.5	<p>Provide input to EBS design concepts for non-metallic materials.</p> <ul style="list-style-type: none"> <li>• Provide input to the Engineered Barrier System design concepts; perform calculations and analyses.</li> <li>• Document inputs to EBS design concepts.</li> <li>• Provide materials evaluations for decision making on EBS concepts.</li> <li>• Assist YMP in conducting formal reviews of EBS design concepts.</li> </ul>					Benton	Fish
			B		X	3		
			D			3		
				X				
21	1.2.2.4.1	<p>Provide input to selection of design concepts for WP ACD.</p> <ul style="list-style-type: none"> <li>• Perform technical and cost analyses of EBS design concepts.</li> <li>• Document analyses of design concepts.</li> <li>• Perform technical and cost analyses in support of specific system studies.</li> <li>• Assist YMP in conducting formal reviews of EBS analyses.</li> <li>• Prepare M&amp;O procedures.</li> <li>• Prepare analytical cases for quality affecting work.</li> </ul>					Benton	Doering, Fish
			F	X	X	5		
			D		X	3		
22	1.2.2.4.2	Provide input to container fabrication and closure development. Collect and Consolidate data, material specimens			X			

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
23	1.2.2.4.3	Prepare report of alternative WP/EBS concepts.  • Prepare report of alternative WP/EBS concepts.  • Assist YMP in conducting formal review of alternative WP/EBS concepts.	D	X		3		
24	1.2.3.1	<b>1.2.3 SITE</b> Prepare geologic evaluation reports. Prepare new geologic and geophysical logs of core. Prepare evaluation reports for DOE		X				
25	1.2.4.1.1	<b>1.2.4 REPOSITORY</b> Repository Management and Integration		X				
26	1.2.4.2.3	Perform system assessment to support Repository SBT/ESF designs. (Administrative Tasks Exempt.)	D			3	McKie Fredrickson	Clark, Fredrickson, Whitton
27	1.2.5.1	<b>1.2.5 REGULATORY &amp; INSTITUTIONAL</b> Regulatory and Institutional Management and Integration		X				
28	1.2.5.2.1	NRC Interaction support and regulatory training.	J			2	Statton	Agnew, Datta, Distel,
29	1.2.5.2.2	Update Site Characterization Reference database and TRIMS		X				
30	1.2.5.2.3	Regulatory Review		X				
31	1.2.5.2.4	Technical Support Documentation			X			
32	1.2.5.2.5	Study Plan Coordination		X				
33	1.2.5.2.6	Semi-annual Progress Reports			X			
34	1.2.5.3.3	Environmental Regulatory Compliance		X				
35	1.2.5.7	Communication and Liaison			X			
36	1.2.6.1.1	<b>1.2.6 ESF</b> Support interfaces with SBT, Repository and WP. Develop Operations and Maintenance Plan.  • Manage and integrate work performed within the ESF WBS.					Hahn	Allan, Clark, Fredrickson Beyer, McKenzie McKie, Whitton

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
36		<ul style="list-style-type: none"> <li>• Support interfaces with SBT, Repository and WP.</li> <li>• Develop Operations and Maintenance Plan.</li> <li>• Assist YMP in conducting formal reviews of ESF documentation</li> </ul>	C		X	3		
37	1.2.6.2.1	Perform ESF related construction management duties. <ul style="list-style-type: none"> <li>• Review Site Preparation Work Package</li> <li>• Review drawings and specs for site preparation.</li> <li>• Investigate/assess implementing line procedures.</li> <li>• Evaluate construction plans and schedules.</li> <li>• Review long lead-time items and specifications.</li> <li>• Assist YMP in conducting formal review of Work Packages.</li> </ul>	D			3	Hahn	Afian, McDonald
			F	X		5		
			A		X	3		
				X				
38	1.2.9.1.1	<b>1.2.9 PROJECT MANAGEMENT</b> Prepare Nevada ILP's. Define and manage M&O Organization. <ul style="list-style-type: none"> <li>• Manage the YMP Work Scope assigned to the M&amp;O.</li> <li>• Prepare Nevada Implementing Line Procedures.</li> <li>• Assist YMP in the conduct of formal reviews.</li> </ul>			X		Foust	Afshar, Schutt
			F			5		
				X				
39	1.2.9.1.2	Verify personnel qualifications Administrative Services.	K			2		
40	1.2.9.1.4	Implement M&O Records Management System. Develop and operate Document Control System and LRC.					Verden	Tate, Milinchuk, Roberts

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
40		<ul style="list-style-type: none"> <li>• Develop procedures for Document Control Systems and Local Records Center (LRC).</li> <li>• Develop Document Control System</li> <li>• Develop Local Records Center</li> <li>• Train center staff.</li> <li>• Develop transition plan to transition Central Records Facility, Document Control Center, and the Document and Records Center from T&amp;MSS to the M&amp;O.</li> <li>• Assist YMP in the conduct of formal reviews.</li> </ul>	F			5		
			H			6		
			G			17		
			J			2		
					X			
				X				
41	1.2.9.1.5	Provide training in support of QAW. Manage, coordinate and implement training for M&O. <ul style="list-style-type: none"> <li>• Manage, coordinate training for M&amp;O.</li> <li>• Prepare training lesson plans, instructional materials and on the job training curriculum.</li> <li>• Train instructors for formal classroom instruction.</li> <li>• Develop and implement a training records keeping system.</li> <li>• Prepare procedures for training.</li> <li>• Assist YMP in the conduct of formal reviews.</li> </ul>					Watson, J.	Agnew, Distel, Justice, J. Goodman, Hurst, McKenzie, Nelson, Stahl, Adame, St.Clair Justice, R.
			J		X	2		
			J			2		
			J			2		
			F			5		
				X				
42	1.2.9.1.6	Provide for development of quality affecting software. Provide operation and maintenance (include Security) for M&O systems.					Low, J.	Frank, Pierre

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
42		<ul style="list-style-type: none"> <li>• Provide M&amp;O administrative support.</li> <li>• Develop and maintain automated data bases that contain quality data.</li> <li>• Provide for the development of quality affecting software.</li> <li>• Develop and maintain automated information systems that contain quality data.</li> <li>• Prepare Information Resources Management Procedures</li> <li>• Assist YMP in the conduct of formal reviews.</li> </ul>	L		X	19		
			F		X	5		
43	1.2.9.2	Project Control			X			
44	1.2.9.3.1	Establish and manage a QA organization for program support. <ul style="list-style-type: none"> <li>• Establish a QA organization to implement an effective QA program.</li> <li>• Assist in the development, review and approval of quality affecting plans and procedures.</li> <li>• Provide support and assist in the implementation of QA training</li> <li>• Assist YMP in the conduct of formal reviews.</li> </ul>	I			1,2 16,18	Jackson, J.	
			F			5		
			J			2		
					X			

# TASK MATRIX

Sequence Number	WBS	Activity Description	QAW		Non QAW	Criteria No.	Responsible Manager	Personnel
			M&O Index	YMP				
45	1.2.9.3.2	<b>Audits &amp; Surveillances</b> <ul style="list-style-type: none"> <li>• Develop and execute a surveillance program to verify procedures and activities comply with the overall QA program requirements.</li> <li>• Develop detailed procedures for conducting audits and surveillances.</li> <li>• Monitor and track deficiencies and corrective actions.</li> <li>• Assist YMP in the conduct of formal reviews.</li> </ul>	I  F  I	   X		1,2 16,18  5  1,2 16,18	Hodgson	Taipale
46	1.2.9.3.3	<b>Quality Engineering - Perform document review &amp; approval, assist in resolution of deficiencies, provide analysis and investigation to technical problems that relate to quality affecting activities, and provide QA interface throughout total M&amp;O effort.</b> <ul style="list-style-type: none"> <li>• Perform document review and approval to verify that the QA program is properly implemented and requirements are defined.</li> <li>• Assist in the resolution of deficiencies including root cause determination.</li> <li>• Provide analysis and investigation of technical problems that relate to quality affecting activities.</li> <li>• Provide QA interface across all disciplines throughout the M&amp;O</li> <li>• Assist the YMP in the conduct of formal reviews.</li> </ul>	I  I  I  I	    X		1,2 16,18  1,2 16,18  1,2 16,18  1,2 16,18	Justice, R.	Wade

**ATTACHMENT 6.3**  
**OPEN ITEMS LIST**

**READINESS REVIEW OPEN-ITEMS LIST**

**READINESS REVIEW Nevada Site FY92**

OPEN ITEM NO.	ACTION REQUIRED	RESPONSIBILITY	ESTIMATED COMPLETION DATE	DATE CLOSED	CLOSED BY (INITIALS)
1	Revise MGP 3-2	MGDS Office Manager	1/15/92		
2	Revise MGP 3-2, 3-3, 3-4 and 3-5	MGDS Office Manager	1/15/92		
3	Revise MGP 3-2, 3-3, 3-4 and 3-5	MGDS Office Manager	1/15/92		
4	Develop new procedure or revise MGP 3-1	MGDS Office Manager	1/15/92		
5	Develop an Interface control procedure	MGDS Office Manager	2/15/92		
6	Revise MGP 3-1	MGDS Office Manager	1/15/92		
7	Revise MGP 3-1, Attachment 1	MGDS Office Manager	1/15/92		
8	Revise MGP 3-4	MGDS Office Manager	1/15/92		
9	Add a verification check-list to MGP 3-2, 3-3, 3-4	MGDS Office Manager	1/15/92		
10	Add a sign-off matrix to MGP 3-3 and 3-4	MGDS Office Manager	1/15/92		
11	Revise MGP 3-2	MGDS Office Manager	1/15/92		
12	Revise SRP-6-1	Nevada Site Records Manager	1/17/92		
13	Revise SRP 6-1 Revise MGP 3-1	Nevada Site Records Manager MGDS Office Manager	1/15/92		
14	Revise QAP-5-1	QA Manager	1/15/92		
FTX-A044 REV.0	Revise 6-1	Secretariat Operations Department Manager			QAP-2-6

**READINESS REVIEW OPEN-ITEMS LIST**

**READINESS REVIEW Nevada Site FY92**

OPEN ITEM NO.	ACTION REQUIRED	RESPONSIBILITY	ESTIMATED COMPLETION DATE	DATE CLOSED	CLOSED BY (INITIALS)
15	Revise QAP-5-1  Revise 6-1	QA Manager  Secretariat Operations Department Mgr.	1/15/92		
16	Revise SRP 17-1	Nevada Site Records Manager	1/15/92		
17	Develop procedures for controlling the development of Quality Affecting software	Technical Data Base Software Control Manager	2/28/92		
18	Clarify requirement for grading packages with YMPO	Nevada Site Manager	1/15/92		
19	Approve and Implement System 80 procedures	Nevada Site Records Manager	1/17/92		
20	Develop procedures for CRF, PMC, and DCC activities	Nevada Site Records Manager	7/31/92		

**ATTACHMENT 6.4**  
**OPEN ITEM REPORTS**











**Two recommendations are provided, one short term and one long term.**

**Short term** - The project should develop a MGDS procedure for preparing any Interface Control Documents (ICDs). This procedure will be followed for developing any MGDS ICDs. The MGDS Integration Organization should also identify the system level ICDs required to support the MGDS design activities.

**Long term** - The Nevada Site should recommend changes to the YMP SEMP to expand the ICD section (5.4.1.3) to define what is required in the system level ICDs, where they are required, and how they should be reviewed and approved.









**READINESS REVIEW OPEN-ITEM REPORT**

<b>READINESS REVIEW</b> Nevada Site FY92	<b>ATTRIBUTE NO.</b> Design Control 3-7c	<b>OPEN ITEM NO.</b> 10
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**DESCRIPTION OF PREREQUISITE**  
Do interface controls include the assignment of responsibility and the establishment of procedures among participating design organizations for the review, approval, release, distribution, and revision of documents involving design interfaces.

**DESCRIPTION OF OPEN ITEM**  
MGP-3-3 (Tech Drawings) and MGP-3-4 (Specs) require Intradiscipline and interdiscipline reviews. However, there is no formal way of specifying who is approp. and approved for this.

<b>ACTIONS REQUIRED TO CLOSE</b>	<b>RESPONSIBILITY</b>	<b>ESTIMATED COMPLETION DATE</b>
Develop a sign-off matrix such that those approved for reviewing and approving a document for their discipline are clearly identified. Management will develop, control, and approve this matrix (matrix is QAW). Matrix must be referenced in the procedure.	Responsible: MGDS Office Manager	ECD: 1/15/92
HOLD POINT REQUIRED? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		

**PREPARED BY**  
\_\_\_\_\_  
R. M. Sandifer  
Name  
\_\_\_\_\_  
12-12-91  
Date

**ASSIGNMENT OF HOLD POINTS:**  
Complete before utilizing procedure.

<b>ACTIONS COMPLETED DATE:</b>	<b>VERIFIED BY:</b>
--------------------------------	---------------------

**CLOSURE APPROVED BY**  
\_\_\_\_\_  
M&O GENERAL MANAGER  
\_\_\_\_\_  
Date



**READINESS REVIEW OPEN-ITEM REPORT**

READINESS REVIEW	ATTRIBUTE NO.	OPEN ITEM NO.
Nevada Site FY92	Document Control 6-8e	12

**DESCRIPTION OF PREREQUISITE**

QAPD requires procedures to address the marking, removal, or destruction of obsolete or superseded controlled documents.

**DESCRIPTION OF OPEN ITEM**

Requirement on how to properly void a controlled document was not clear in any procedure.

**ACTIONS REQUIRED TO CLOSE                      RESPONSIBILITY                      ESTIMATED COMPLETION DATE**

Add process to SRP-6-1 Section 5.9.

Responsible: Nevada Site Records Manager    ECD: 1/17/92

HOLD POINT REQUIRED? YES \_\_\_ NO X

**PREPARED BY**

S. M. Cummings  
Name

12-12-91  
Date

**ASSIGNMENT OF HOLD POINTS:**

**ACTIONS COMPLETED DATE:**

**VERIFIED BY:**

**CLOSURE APPROVED BY**

\_\_\_\_\_  
M&O GENERAL MANAGER

\_\_\_\_\_  
Date



**READINESS REVIEW OPEN-ITEM REPORT**

**READINESS REVIEW**

Nevada Site FY92

**ATTRIBUTE NO.**

Document Control 6-5

**OPEN ITEM NO.**

14

**DESCRIPTION OF PREREQUISITE**

QAPD states the requirement to clearly delineate a process and authorization to implement a minor change to a document.

**DESCRIPTION OF OPEN ITEM**

No process was clearly delineated in a procedure.

**ACTIONS REQUIRED TO CLOSE**

**RESPONSIBILITY**

**ESTIMATED COMPLETION DATE**

Add ICN process to QAP 5-1 and 6-1.

Responsible: QA Office Manager      ECD: 1/15/92  
Secretariat Operations Dept. Manager

HOLD POINT REQUIRED? YES \_\_\_ NO x

**PREPARED BY**

S. M. Cummings

Name

12-12-91

Date

**ASSIGNMENT OF HOLD POINTS:**

**ACTIONS COMPLETED DATE:**

**VERIFIED BY:**

**CLOSURE APPROVED BY**

M&O GENERAL MANAGER

Date

**READINESS REVIEW OPEN-ITEM REPORT**

**READINESS REVIEW**

**ATTRIBUTE NO.**

**OPEN ITEM NO.**

Nevada Site FY92

Document Control 6-4

15

**DESCRIPTION OF PREREQUISITE**

QAPD requires major changes to documents to be reviewed and approved by the same organizations that reviewed and approved the original issuance.

**DESCRIPTION OF OPEN ITEM**

There was no procedure produced to show that this requirement had been met.

**ACTIONS REQUIRED TO CLOSE**

**RESPONSIBILITY**

**ESTIMATED COMPLETION DATE**

Add this process to QAP-5-1 and 6-1.

Responsible: QA Office Manager      ECD: 1/15/92  
Secretariat Operations Dept. Manager

HOLD POINT REQUIRED? YES \_\_\_ NO X

**PREPARED BY**

S. M. Cummings

Name

12-12-91

Date

**ASSIGNMENT OF HOLD POINTS:**

**ACTIONS COMPLETED DATE:**

**VERIFIED BY:**

**CLOSURE APPROVED BY**

M&O GENERAL MANAGER

Date

**READINESS REVIEW OPEN-ITEM REPORT**

**READINESS REVIEW**

Nevada Site FY92

**ATTRIBUTE NO.**

QA Records 17-12b

**OPEN ITEM NO.**

16

**DESCRIPTION OF PREREQUISITE**

QAPD requires storage procedures for controlling records which includes a described filing system.

**DESCRIPTION OF OPEN ITEM**

Currently there is no filing system in place because of the low volume of records temporarily stored in LRC.

**ACTIONS REQUIRED TO CLOSE**

**RESPONSIBILITY**

**ESTIMATED COMPLETION DATE**

Describe system in SRP-17-1

Responsible: Nevada Site Records Manager

ECD: 1/15/92

HOLD POINT REQUIRED? YES \_\_\_ NO

**PREPARED BY**

S. M. Cummings

Name

12-12-91

Date

**ASSIGNMENT OF HOLD POINTS:**

**ACTIONS COMPLETED DATE:**

**VERIFIED BY:**

**CLOSURE APPROVED BY**

M&O GENERAL MANAGER

Date





**READINESS REVIEW OPEN-ITEM REPORT**

<b>READINESS REVIEW</b> Nevada Site	<b>ATTRIBUTE NO.</b> QA Record 17-7	<b>OPEN ITEM NO.</b> 19
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**DESCRIPTION OF PREREQUISITE**

QARD requires procedures for the implementation of System 80 compliance.

**DESCRIPTION OF OPEN ITEM**

Procedures are in final draft form, but not approved and distributed.

<b>ACTIONS REQUIRED TO CLOSE</b>	<b>RESPONSIBILITY</b>	<b>ESTIMATED COMPLETION DATE</b>
Approve and implement System 80 procedures	Nevada Site Records Manager	1/17/92
HOLD POINT REQUIRED? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>		

**PREPARED BY**

S. Martin Cummings Name 12/18/91 Date

**ASSIGNMENT OF HOLD POINTS:**

<b>ACTIONS COMPLETED DATE:</b>	<b>VERIFIED BY:</b>
--------------------------------	---------------------

**CLOSURE APPROVED BY**

\_\_\_\_\_  
M&O GENERAL MANAGER Date

**READINESS REVIEW OPEN-ITEM REPORT**

**READINESS REVIEW**

Nevada Site

**ATTRIBUTE NO.**

QA Record 17-8

**OPEN ITEM NO.**

20

**DESCRIPTION OF PREREQUISITE**

Transition at YMPO Central Records Facility (CRF) Program Microfilm Center (PMC) and Document Control Center (DCC) activities by August 1992.

**DESCRIPTION OF OPEN ITEM**

Procedures must be in place before starting work in these activities.

**ACTIONS REQUIRED TO CLOSE**

Develop procedures for CRF, PMC, and DCC activities

**RESPONSIBILITY**

Nevada Site  
Records Manager

**ESTIMATED COMPLETION DATE**

July 1992

HOLD POINT REQUIRED? YES  NO

**PREPARED BY**

S. Martin Cummings

Name

12/12/91

Date

**ASSIGNMENT OF HOLD POINTS:**

Transition cannot be completed until procedures are in place.

**ACTIONS COMPLETED DATE:**

**VERIFIED BY:**

**CLOSURE APPROVED BY**

\_\_\_\_\_  
M&O GENERAL MANAGER

\_\_\_\_\_  
Date