Appendix A-D

Quality Management Plan
For
Environmental Engineering & Design

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1.0 PURPOSE

This Quality Management Plan (QMP) defines the responsibilities and procedures for providing the quality of services and products to our customers by the Sacramento (SPK) Environmental Engineering Branch (ED-E) for the environmental programs: Installation and Restoration Programs (IRP), Formerly Used Defense Site (FUDS), Base Realignment and Closure (BRAC) and other Federal customers through consulting or construction (remediation) firms and In-House (I-H) design staffs. The activities cited in this QMP are in accordance with requirements specified in 3.0 REFERENCE.

2.0 SCOPE

This QMP applies to all environmental related projects and deliverables, whether prepared by I-H or Contractors. This QMP applies directly to the Environmental Engineering Branch personnel, and, as appropriate to others supporting Branches.

3.0 REFERENCES

EQP 4-03, Design Process for Hazardous, Toxic, and Radioactive Waste Projects.

SPK Organization: http://www.iso9000.spk.usace.army.mil/docs/appen4.pdf

SPK-ED-E (Environmental Engineering Branch): EEB-PhoneList.doc

4.0 DEFINITIONS

PPMD: Programs and Project Management Division is for the purpose of integrating the efforts of the functional organizations, consist of Project Managers (PM), responsible for project cost and schedules, responsible for upward reporting, primary contact with installation or customer.

Functional Chiefs – The chiefs of technical functions are responsible for developing and maintaining a professional, technically competent workforce; establishing and maintaining the necessary systems, technical processes, and environment to produce quality products; providing the technical oversight to assure production of quality products; and serving as principal members of the District corporate board. The functional chiefs are also responsible and accountable for the quality of the organizations technical products, assigning qualified members to the project delivery teams, keeping commitments made in various project related plans, and for ensuring that their technical processes produce the desired results.

PM – The PM is the leader of the team assembled to execute a project, is responsible and accountable for insuring that the team takes effective, coordinated actions to deliver the completed project, and is the primary interface with the customer and among the functional elements. The PM manage project in accordance with project management plan which he or she developed for each project and approved by the customer and Project Review Board. The PM keeps the functional chiefs apprised of the customer's expectations and the status of the project's progress, assists in early identification and resolution of problems, and identifies where additional talent and effort may be required to meet the district's commitments established in the project management plan.

Project management plan - It is a binding agreement among all elements supporting the project that details how the work will be executed and how resources will be expended. It defines the baseline scope, schedule, resources, including contingencies, and provides a configuration (change) management plan for the project.

Project Manager (PM)/Project Engineer (PE) – Albuquerque, Los Angeles, San Francisco, and Sacramento Districts have Project Managers for the remedial investigation, design, and remedial projects in their respective geographic areas of responsibility. If a project is being designed for another District installation, ED-E will have a Project Engineer assigned to coordinate the investigation/design effort for either in-house or A-E products. In the case of Sacramento District installations, PM duties will usually be handled by

PMs in SPK's PPMD. In this case, the PE's duties will be coordinated by the PM. PM duties can be performed by PE for selected project, or project phases.

Project teams – project teams shall work in concert to deliver projects that are consistent with customer expectations and corporate needs. The PM will ensure that the direction and efforts of the team are unified, focused, and coordinated.

Team member – team member must keep his or her respective organizational element/functional chief informed at all times, especially of high priority or sensitive project issues.

Quality Assurance (QA) – Activities taken to ensure the overall effectiveness of the quality control process. Its primary emphasis deals with the prevention of nonconforming products through the evaluation and assurance of adequate quality controls being utilized.

Quality Control (QC) – The intent is to deliver quality engineering, investigation, and design services and products to our customers on schedule and within budget. A quality product conforms to customer expectations in functional, technical, aesthetic, safety and health, and environmental requirements.

Regulatory Compliance: Compliance with Federal, State, and local regulations.

Architect–Engineer contracts are used when a design (or incidental related services) requires the services law a register or licensed architect or engineer as defined by State law including surveying services as related to design.

Service contracts are used for investigative services not leading directly to a design product, for plant operations, for soil removal and transportation, for soil and ground water treatment, and for building demolition related to environmental cleanup/remediation, etc.

5.0 POLICY

Branch/Section Chiefs and all personnel involved in the investigation, design, checking and/or review, and management process for development of projects are responsible for adhering to the requirements of this QMP. To continuously improve our product, specific attention is required by all personnel involved to recognize applicable lessons learned and to provide lesson learned input to SPK's database.

The Environmental Engineering Branch (ED-E) shall be responsible for the engineering and safety aspects of the Environmental Program during Investigation and Design. In addition, ED-E provides technical and safety support and assures quality during investigation, design, and remedial action (upon request by construction field office). The Environmental Engineering Branch (ED-E) shall also be responsible for the engineering management of A-E service and I-H prepared products by establishment of criteria, functional requirements, an execution schedule and related budgets. The work and services in ED-E shall be performed in accordance with applicable regulation and Memorandums concerning A-E and service contracts, design execution, and coordination with the PM. Geotechnical Branch, Cost Engineering Branch, Construction Branch, and Contracting Division (CT) personnel participate in and support this effort. ED-E has responsibility for the overall designer selection process, contract oversight, and performance evaluation when A-E firms are used for projects other than those managed by the PM. ED-E shall also be responsible for the production of I-H designs. Before taking on an I-H design effort, ED-E shall ensure that sufficient resources with appropriate technical capabilities are available to complete the project in the required schedule. Open-end A-E service and contract resources, and Centers of Expertise (CX) will be utilized when necessary, to complement the design team.

6.0 QUALITY MANAGEMENT

6.1 Project Initiation and Coordination. No work shall be initiated by ED-E personnel prior to receipt of a PR&C and a brief written Scope of Services from the PM.

6.1.1 Customer Requirements are documented in the PMP which will be reviewed by team member prior to start of each assigned project. The PE shall be responsible for the overall execution of investigation/design project to meet customer requirements. The PE shall be the POC for PM.

6.1.2 Technical Requirements.

1) Pre-scoping meeting and site visit. The PM shall initiate a scoping PR&C and chair a pre-scoping meeting with the customer and design team. The purpose of this meeting is to define clearly the customer's expectations, requirements, and scope for the project. The PE and appropriate technical personnel shall attend the meeting to ensure all significant and environmental areas associated with the project are adequately discussed and customer requirements are understood. The PM shall ensure the necessary customer and construction representatives attend this meeting to discuss adequately and agree on project requirements. This shall include the types of investigation/design, deliverables, review process/responsibilities, and project milestones and constrains. The meeting shall include a site visit to physical condition of the site that could affect the investigation/design. The PM shall document the discussion and agreements reached during the meeting and distribute a copy of the minutes to all appropriate parties.

2) Criteria, regulation, and guidance. The designer shall visit the Huntsville Engineering and Support Center web page: http://www.hnd.usace.army.mil/techinfo/index.htm for the latest updated technical criteria, regulation, and guidance. The designer shall visit the USACE Lesson Learned Program and Innovative Technology web page: http://hq.environmental.usace.army.mil/tools/tools.html to identify and avoid past problems and issues. The designer shall review and incorporate the applicable technical criteria, regulation, guidance, and lesson learned documents into the investigation/design documents.

3) Innovative Technology. The designer/reviewer shall integrate the use of innovative technologies that have potential to reduce costs and improve products in all phases of projects where applicable. For information on innovative technology see Innovative Technology.doc.

6.1.3 Scope of Services (SOS) Prior to writing SOS, the PM, PE, and CT representative shall agree on an acquisition plan with the customer as appropriate. When the acquisition plan involves the acquisition of a new contract or involves the use of the TERC or PRAC contracts, the proposed plan must be presented to the HTRW Acquisition Planning Board for review and approval. The acquisition plan shall be reflected in the SOS, Total Project Budget and Schedule. Health and Safety Plan and Chemical Data Quality Control Plan requirements shall also be reflected in the SOS.

As a result of the Pre-scoping meeting, the PE shall develop a detailed SOS for the project that defines the deliverables and services to be provided to the design team to meet the customer's expectations and requirements. Project engineering budget and schedule data shall be based on the requirements specified in the SOS.

6.1.4 Quality Plans

6.1.4.1 Quality Control Plan (QCP). A QCP shall be prepared in accordance with ER 1110-1-12 for every engineering product or service. The QCP for small or simple projects (i.e., Programmed Amount (PA) <$1.0 mil) should be a very simple, generic document, setting forth the schedule and a minimum of coordination information. A more comprehensive document shall be prepared for large or complex projects (i.e., PA > $1.0mil). While a design QCP should be complete, it need not duplicate items of a definitional or procedural nature that are in the QMP. The PE shall submit the QCP to the PM for review and incorporation into the PMP and to Chief, Environmental Engineering Branch for review/approval prior to initiation of the technical work on the project.

1) <u>Contracts</u>. Contracts procurement is structured to maximize competition, provide contract opportunities for many firms, and maximize small business (SB) and small disadvantaged business (SDB) participation, while satisfying the needs of the Government in the most effective, economical, and timely manner.

SPK utilizes different contract types and strategies to execute its HTRW missions. Table 1 lists the major environmental contract types and features. The HTRW Advance Acquisition Planning Board is responsible for deciding the acquisition of all HTRW contracts and evaluates the appropriate contract vehicle for planned remedial actions. For each task order, the Contracting Officer (KO) is responsible for selecting the appropriate contract type in coordination with technical, contracting and legal specialist. The selection of appropriate contract types generally depends on Scope Certainty, Nature and Size of Work, Schedule, and client concerns.

The procurement process and QA/QC procedure for A-E, service, and remedial contracts are outlined in Environmental Engineering Services contract Management Plan which are listed in Table 1.

The consultant/Contractor is required to submit a QCP concurrently with the fee proposal. The QCP is their management plan for execution of the contract. The QCP shall be prepared in accordance with ER 1110-1-12 Appendix C. It shall describe the way in which the consultant/contractor will produce the deliverables and the steps that will be taken to control quality.

A performance evaluation is prepared for all contracts for A-E services in excess of $25,000 (FAR 36.604). This evaluation is prepared by the technical personnel who reviewed and accepted the A-E firm's work. The ACASS software is used to facilitate the preparation and routing of the evaluations as well as the transmittal and entry into ACASS. Similar performance evaluations are required for services and construction contracts.

The quality of a consulting firm's/contractor's products and services are adequately documented throughout the performance of the contract and the firm kept apprised of the quality of the work. The consulting firm/contractor is notified immediately upon recognition of unsatisfactory performance. Interim appraisals are made and areas of poor or excellent performance are documented. The appraisals are retained in the contract files.

The consulting firm/contractor is responsible for the quality of its products and services, the Districts are responsible for Quality Assurance of the consulting's/contractor's products and services.

2) I-H Design. In order for ED-E to effectively execute the project, effort must be determined, resources defined and allocated, budget and schedule established, and project specific assumptions documented. The requirements for preparation of QCP are described in the hyperlink document: qcp_text.doc. A sample quality control plan is in the hyperlink document: qcp_plan.doc.

6.1.4.2 Safety and Health Program. Safety is the overriding parameter of quality for all types of work. SPK, A-E and contractor performing on-site hazardous waste activities are required to develop and implement a written Safety and Health Program in compliance with the requirements of OSHA standard 29 CFR 19s6.65 (b)(1) through (b)(4). The District Safety and Health Program is currently being developed. A site safety and health and safety plan (SSHP) shall also be developed for each project site. The guidance for preparation of SHP and SSHP is in the hyperlink document: Guidance for preparation of SHP & SSHP.doc

6.1.4.3 Chemical Data Quality Management Program (CDQMP). The goals of the CDQM program are to 1) generate data of acceptable quality for the intended use, 2) satisfy the needs of the customer and the regulators, 3) generate sufficient data of known quality of the first attempt, and 4) provide a historical record for potential future use. SPK, A-E, and contractor performing environmental sampling and analysis work are required to develop and implement a written CDQM program. CDQM program describes management, QC/QA process and procedure for collection of environmental data to meet the goals described above. For each task order, a site specific CDQM plan shall be prepared. SPK's CDQM program for investigation through post remediation of HTRW projects is in the hyperlink document: CDQM.doc

Table 1
Major Environmental Contract Types and Features

Contract	ID/IQ or project specific	Ceilings	Limitations on Use	Contract Pricing	Authority Delegated to Field	Process and Procedure
A-E	ID/IQ		Investigation and/or design	Negotiated Firm Fixed Price		TSKORSOP.doc
Invitation for Bid	Project Specific	None – determined by bid	Construction / Remediation only	Firm Fixed Price	Administrative Contracting Officer (ACO)	
Preplaced Remedial Action Contract (PRAC)	ID/IQ	Typically $50 M ceiling Typically no task order limit One year base contract with four 1-yr options	Construction / Remediation Services only (only incidental A-E services)	Cost-Reimbursable - with - Fixed Fee Award Fee or Incentive Fee - or - Fixed Price	ACO, unless service, then Contracting Officer's Representative (COR) only	TSKORSOP.doc
Total Environmental Restoration Contract (TERC)	ID/IQ	Typically greater than $200 M Typically no task order limit One four year base contract with two 3-yr options	Cradle to Grave Investigation, Design, Construction / Remediation Services	Cost-Reimbursable - with - Fixed Fee Award Fee or Incentive Fee	COR	1. Each PM has a copy of the contract management procedure

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Contract	ID/IQ or project specific	Ceilings	Limitations on Use	Contract Pricing	Authority Delegated to Field	Process and Procedure
Multiple Award Remediation Contract (MARC)	ID/IQ	Collective ceiling is established for multiple contracts. i.e., One award could be $100 M for four contracts. One contractor could get the bulk of that.	Construction / Remediation Services only (only incidental A-E services)	Cost-Reimbursable - with - Fixed Fee Award Fee or Incentive Fee - or - Fixed Price	ACO, unless Service, then COR only	
Small Action Remedial Tool Contract (SmART)	ID/IQ	Less than $5M contract ceiling $500,000 or no task order limit One two year base with one three year option	Remediation Services only (only incidental A-E services)	Firm Fixed Price	COR only	TSKORSOP.doc
Rapid Response	ID/IQ	Typically $50M Typically no task order limit One base year with four one-year options.	Emergency or Time Critical Remediation Services only	Cost Reimbursable with Fixed Fee	None, retained in Omaha	
Service	ID/IQ	Varies extensively	Drilling, Analytical services, Sampling, Geophysical services	Fixed price or Cost Reimbursement	COR	TSKORSOP.doc

Table 1
Major Environmental Contract Types and Features

Contract	ID/IQ or project specific	Ceilings	Limitations on Use	Contract Pricing	Authority Delegated to Field	Process and Procedure
Time and Materials	ID/IQ	Varies by contract	Typically has been used for Ordnance Removal or emergency situations	Reimburse-ment of labor at fixed hourly rates (which include profit) and cost only for material	ACO, unless service, then COR only	

6.1.4.4 Quality Assurance Plan (QAP). A QAP shall be prepared for every engineering product or service completed by A-E contract. The PE has the responsibility to review, discuss and obtain Branch approval for each project with the principal of each design team. The PE shall have a system in place to ensure himself/herself that the QAP/QCP is being implemented and followed through each phase of investigation/design process. These activities may include phone calls to the designer to verify scheduled QC function, design deliverables, and for visit to designer's office, and/or requesting copies of the designer's QC activity work sheets. Particular attention will be paid to the requirement of the consulting firm to submit a set of final check prints and comments to PE. The QAP shall address the above activities and verify that the QCP has been carried out.

6.2 Design Verification/Review. All projects shall be appropriately reviewed and checked.
6.2.1 Independent Technical Review. Independent checking and reviewing of each designer's assumptions, analyses, and calculations, investigation methods, remediation system, shall be performed by Environmental Engineering and Quality Assurance sections throughout the investigation/design process. The PE shall coordinate the review effort and assure the review comments are resolved prior to finalizing for the next submittal. The design lead shall assure an interdiscipline review was performed within individual designers to check for discrepancies between theirs and other design team members to eliminate flaws and conflicts. The reviewer shall also review for compliance of SOS, and shall notify the PE in writing for any deviation from SOS.

6.2.2 Laboratory Validation. Prior to performing project specific analysis, all contract laboratories are required to demonstrate analytical competency through a detailed evaluation of the laboratories technical capabilities also referred to as the lab validation process (see CDQM.doc). In additional to the validation process which is good for a period of 18-24 months, SPK provides for additional quality through the use of phased laboratory audits as follows:

6.2.2.1 Use of Phased Audits for Monitoring Laboratory Performance
The implementation of a two-phase audit and check system is a method for oversight of contract laboratory operations. A two-phase check involves a system of pre-award on-site audit and follow-up inspections with attendant documentation for control over data quality and processes relevant to contract requirements. Audits planned for project activities are addressed in the project-specific SAP. HTRW-CX validation and agency audits do not preclude the need for SPK project-specific audits.

Pre-Award On-Site Audit - These audits include review of project initiation systems, laboratory sample handling and tracking procedure, sample analysis procedures, routine quality control checks, data handling and reduction, data and report review systems, data storage, electronic data handling, reporting, and storage, personnel qualifications and training, corrective action systems, standards control, document control, waste handling and disposal, and the laboratory ethics training. Highly specific project requirements, such as calibration criteria, sensitivity check samples, matrix spiking levels, data validation

criteria, and PE sample acceptance criteria will be in place prior to the start of the project and these criteria will be documented in the project-specific SAP.

Follow-up Audits - If the pre-award on-site audit revealed significant laboratory deficiencies, follow-up audits will be performed at the discretion of SPK and the contractor to ensure that corrective measures have taken place to sufficiently address the deficiencies and to ensure data quality requirements are being met. Follow-up audits will focus heavily on project specific data. They will incorporate the review and tracking of raw data from the original measurements through the generation of a final report. Audits normally will require some regeneration of raw data from electronic files to verify the integrity of this process. If significant problems are found through periodic audits, corrective action must be taken.

6.2.3 Mandatory Centers for Expertise (MCX) Reviews. PM shall screen each HTRW projects against the criteria stated in CEMP-RT Memorandum (http://www.usace.army.mil/inet/centers/mcx/htrw/htrw.pdf) to determine the appropriate review process. Projects meeting those criteria shall be submitted to CX for external review. The screening process shall be documented and included in the QCP. A suggested form for the documentation is included in CEMP-RT memorandum. PM shall coordinate this review effort.

6.2.4 Certification. The Environmental Engineering Branch, Chief of Engineering Division or District commander shall certify that the quality control process for each design has been completed and all identified technical issues have been resolved.

6.2.5 Biddability, Constructability, Operability and Environmental (BCOE) Review. BCOE review are required for all design products that are to be contracted by the District for construction/remedial action. The PE shall coordinate with construction division for the review and assure all comments are resolved.

6.3 Project and Program Review Boards. Project/Program Review Board (PRB) meetings are held at the Division and District levels periodically to keep senior management informed of progress, resolve issues, and assess performance. Members of the PRBs are the Division and District Commander and his or her designated senior staff members. Customers participate in PRB meetings as appropriate.

6.4 Quality Management Reviews. To assure that the quality requirements are met, HQUSACE, in coordination and cooperation with SPL, SPD will conduct quality management reviews. These reviews are made to assess the effectiveness and implementation of individual USACE command's quality management plans. The reviews are accomplished in a stand-alone mode or in conjunction with other command inspections/reviews (i.e., command inspections, Engineer Inspector General inspections, etc.). Regardless of how conducted, higher authority review of quality management plans at all operating USACE commands is accomplished on a three-year frequency, as a minimum. The Director of Programs Management at SPL, SPD will periodically review their own as well as their executing organizations' implementation of the USACE PMBP to evaluate the effectiveness of their quality assurance, efficiency, and execution. Executing organizations (i.e., Districts, FOAs, Laboratories, etc.) shall periodically assess their project and program management processes and practices to ensure effective implementation of the plan requirements.

6.5 Division and CX Audit Responsibilities. SPK with requested support from the HTRW and/or OE CXs, selectively audit or review the QC processes (within their respective jurisdiction). This includes meeting periodically with Districts to review their quality control processes through evaluation of selected products and services at various stages of development to assure compliance with the QMP and to assess their quality. These reviews also help to identify system problems, trends, and improvements (when needed) to the quality management and quality control process, and to assure compliance with current SPD and HQUSACE policy. The selection of products for detailed audits are based on a number of criteria, including the expressed needs and concerns of the District, new processes or techniques, or product types that have poor performance histories. Determination of the need for such audits are made at any time during product development.

6.5.1 Audit Process. The audit process may take many forms, including those discussed in CDQMP of this QMP. Upon the determination that a formal audit is required of an entire functions quality

management process, it shall consist of the following: (1) Letter notification to District Commander identifying need for QC audit, studies/projects to be audited, specific data required for audit (see general data requirements, below) and audit process and schedule specific to the identified studies/projects; (2) Review by QA team of project data provided by District; (3) Counterpart discussions (on an as needed basis); (4) Full audit of project documents (if determined necessary by QA team); and (5) Outbrief/report to the Chief of the functional element responsible for the technical product being audited and the District Commander on the Quality Management of the project.

6.5.2 General Data Requirements for Formal Audit. The data required for a specific study/project generally shall include the following: Brief description of the overall study/project and each activity related thereunto; QCP for study/project; Minutes of the Technical Review Strategy Session; Comments made by the Independent Technical Review Team during both seamless and product specific reviews; Memoranda documenting resolution of ITRT comments; and list of products generated.

6.6 Value Engineering (VE) Studies. VE studies are required for all projects greater than $2M. The PM will assess VE requirements per project.

6.7 South Pacific Division (SPD) Involvement. SPD will perform audits and QA checks of each district's Environmental program.

7.0 Records. Records for the following will be kept in the project files maintained by the PM:

a. Work and Funding authorization Directives.
b. Pre-scoping meeting minutes.
c. SOS.
d. Total Project Budget
e. Project Schedule
f. Notice to Proceed
g. A-E/I-H QCP document
i. Distribution memorandum
j. Annotation review comments
k. QC certificate
l. A-E/I-H performance evaluation

All final studies/investigation/design documents are filed in Environmental Engineering Library. At the end of the design project, the project file shall also be filed in the library using the Modern Army Recordkeeping System (MARKS). All documents are checked out and returned by using a library checkout procedure. A white binder in the records processing area shall be signed by the borrower and signed again when the documents are returned. After the library documents have been shelved for a number of years with limited usage, they are transferred to the Records Holding Area (RHA). The documents are stored at the RHA until retrieval needs have been dismissed sufficiently to allow them to be returned to the Federal Records Center (FRC) in San Bruno, CA. All information is retrievable within 24 to 48 hours from the RHA. When the project ends the documents are signed off by the individual PM to be "RETIRED" – to the FRC. The documents receive another tracking number and are stored at FRC for 30 years. The retrieval timeframe is approximately three working days. After 30 years, the records are transferred to the National Archives Center, in San Bruno, CA for permanent retention.

8.0 Training.

8.1 Short Term Training. It is the policy of the Corps of Engineers to provide appropriate training and development opportunities to assure maximum efficiency of civilian members in the performance of their official duties. Training needs are reviewed, and effective training practices and techniques applied in efforts to raise individual performance and to meet present and anticipated needs for individual knowledge, skills and abilities. The Corps has developed a wide array of HTRW courses and workshops tailored to the environmental mission needs. These courses range from the administration of environmental contract delivery orders, risk assessment and management, environmental sampling, safety and health at hazardous waste sites, and environmental regulations to technological aspects of environmental restoration such as

soil vapor extraction and bioventing. In addition, the Corps takes advantage of courses, seminars, and workshops sponsored by other agencies and the private sector. Individualized planning and programming for this training is accomplished via Individual Employee Development Plans as described below.

8.2 Long Term Training. To keep the Corps abreast of managerial, technical, and scientific advancements, some members may need training opportunities beyond the customary short-term programs. A variety of long-term training opportunities are provided by DOD, HQDA, HQUSACE and local activities. These opportunities allow employees to obtain formal, continuous, detailed technical knowledge at major universities. Every Corps member who meets the established criteria and standards are given an equal opportunity to be considered for long-term training and education. Directions from HQUSACE also prescribe minimum expertise requirements for specific specialty areas in various disciplines for the HTRW Design Districts.

8.3 Resource Sharing. The development of new technologies, criteria, and methods also requires a minimum technical expertise level for each discipline, depending on the extent and nature of product, service, or project accomplished by in-house personnel. Utilization of these District specialists Division-wide or as instructors in Corps sponsored short courses is often employed to improve capabilities. The Directorate of Engineering and Technical Services Division at SPD identifies HQUSACE mandatory specialist requirements and evaluates them against the District staffing; canvasses the District annually to identify professional experience levels by discipline, specialty area, and technical expertise; and evaluates these experience levels against the quality and review of the products being produced. Any additional training requirements are to be done either by Division or District personnel, if practical.

8.4 Individual Development Plans. It is the objective of Sacramento District to promote the retention/development of technical expertise of the engineering staff by encouraging developmental assignments, quality training, professional registration, participation in technical societies and conferences, etc. Individual Employee Development Plans (IDPs) are prepared and updated on an annual basis. These five-year plans identify developmental objectives (in short and long-term goals), required and recommended training, developmental assignments, and training and self-development already completed. Individual Development Plans (IDPs) are used to encourage continual employee enrichment and development.

9.0 Computer Hardware and Software

9.1 Organizational Policy. It is the policy of USACE to promote the widest acceptance and broadest perspective in the development of Corps information resources and to assure that data collected, analyzed, processed, and maintained on all automated data processing systems, in support of USACE programs and functions be accurate and of sufficient integrity to support effective quality management as established by USACE Information Resources Management (IRM) Program. All USACE activities have a local Information Resources Management Steering Committee (IRMSC) or equivalent.

There is no in-house software development in the environmental programs at this time. All of the programs used are either commercial off the shelf (COTS) software or programs that are made available by the Environmental Protection Agency, the Air Force, the Army, or other agency. COTS software is generally purchased at the request of the customer or because it is widely used by the Corps of Engineers.

Information Management Offices within each Division and District are responsible for validating and approving the requirements for the purchase and maintenance of all hardware and software. They also ensure that applicable Information Resource Management (IRM) requirements and standards are met.

Corporate automation information systems (AIS) for project and financial management are used to manage each project and program. Developing, defending, and maintaining budgetary data and all other information necessary to manage a project is the responsibility of the PM. Supervision of this process, along with development and maintenance of all program data and oversight of the AIS, is the responsibility of the District's Deputy for Programs and Project Management (DPM). The DPM will also supervise the

aggregating of program and project data so as to facilitate review and management recommendations by the District/Division senior staff, and informed decision-making by the Commander.

9.1.1. Automated Review Management System. The Automated Review Management System (ARMS) is used to manage design review comments. The use of this system is encouraged on Corps projects but is not mandatory. ARMS provides an effective and economical means of compiling and assembling comments from all reviewing elements, coordinating comments by deleting inappropriate or duplicate comments, and back checking to ensure proper resolution. At this time, ARMS is the only approved system for automated management of review comments for Corps projects.

9.1.2. Use of Automated Data Processing Systems.

9.1.2.1. The USACE HTRW Lessons Learned System is a computer based system that has been designed to facilitate the exchange of information among multidisciplinary USACE elements with execution responsibilities in the Environmental Restoration arena. This system provides a means to identify real or potential problem areas in the HTRW program, collect ideas on solutions to these problems, and to make the information available to all USACE Commands engaged in this work. The system relies primarily on the electronic transfer of data to identify problem areas and collect corresponding ideas and solutions to distribute to system users. The HTRW Center of Expertise (CX) implements and maintains the system. Engineering and construction personnel use personal computers to access the central file.

9.1.2.2. Architect-Engineer Contract Administration Support System (ACASS) is an automated database of A-E qualifications, DOD A-E contract awards, and A-E performance evaluations. It is maintained and operated by the Contracting Division of the Portland District. ACASS is used primarily by DOD agencies but other Federal agencies may transmit evaluations to ACASS and access information in ACASS. ACASS fulfills Federal Acquisition Regulation requirements eliminating the responsibility for individual offices: to maintain files on firms wishing to be considered for Government contracts; classify each firm with respect to location, specialized experience, professional capabilities and capacity; maintain records on contract awards in the past year; maintain performance evaluation files; and distribute performance evaluations to all contracting offices.

9.1.2.3. Construction Contract Appraisal Support System (CCASS) is a centralized and automated database containing performance evaluation information on DOD construction contractors. The standard form SF 1420, Performance Evaluation – Construction Contracts, is electronically transmitted to the CCASS central data base, which is maintained in Portland, Oregon in accordance with criteria established in DFARS 236.201. This software program is designed to assist the construction field office in preparing the Standard Form 1420 and electronically distributing the forms to the District office and the centralized database. This program requires some knowledge of personal computers and telecommunication facilities.

9.2. **Information Systems Modernization Program (ISMP)**. The Corps of Engineers has a multi-year management effort underway to replace outmoded software and applications. It is a commitment to improve the business processes and the automation, which are at the heart of our mission. The HQUSACE Information Systems Modernization Program (ISMP) is composed of several systems (described below) including Corps of Engineers Financial Management System (CEFMS), Program and Project Management Information System (PROMIS), and Resident Management System (RMS). The ISMP evaluates all major software systems used by the Corps of Engineers with the goals of: reducing the cost of data collection; verifying and improving processing; reducing the cost of system design, development, and maintenance; and improving the accuracy, completeness, availability, timeliness, and usefulness of information for operation users and decision makers at all levels and across all functional boundaries.

9.2.1. CEFMS. Corps of Engineers Financial Management System (CEFMS) is the business management system used by all Corps offices. CEFMS allows the Corps to manage their work, resources, and funding more efficiently by replacing multiple systems previously used such as Corps of Engineers Management Information System (COEMIS). The system provides immediate, real-time responses for commitment, obligation, labor, and other transactions. CEFMS also has the capability to generate reports

regarding funding expenditures. Electronic signature capability allows managers to convey their approval or authorization quickly and securely. The CEFMS environment has multi-level processing with system to system networking capabilities. The programming and databases are maintained in centralized locations under secure environments. Access to the database information is strictly protected with numerous passwords and other security features.

9.2.2. PROMIS. The Program and Project Management Information System (PROMIS) is the Corps of Engineers standard automated system supporting the business processes of Programs and Project Management. The system consolidates scope, schedule, and costs data provided by the Project Management team to define the total project requirements. This consolidated data is then used as the basis for scope, schedule, and cost negotiations within the Project Management team. PROMIS is designed to be integrated with data residing on other Corps of Engineers Automated Information Systems such as the Corps of Engineers Financial Management System (CEFMS) and Resident Management System (RMS). At present, use of PROMIS within USACE is limited.

9.2.3. RMS. The Resident Management System (RMS) is an automated construction-management/quality assurance information system that is PC-based, LAN-compatible, and primarily oriented to the daily requirements of USACE field-level construction managers. Its primary features include capabilities to support construction project planning, contract administration, quality assurance, payments, correspondence, submittal management, safety and accident administration, modification processing, and management reporting. RMS is seen as a powerful, automated management tool to increase staff productivity and help ensure construction quality of projects. Upon completion of development, RMS has the capability of communicating with other USACE automated information systems such as PROMIS and CEFMS.

INDEX OF HYPERLINK DOCUMENTS

Paragraph	Hyperlink Documents	Responsible for update
3.0	http://www.iso9000.spk.usace.army.mil/docs/eqp0403.pdf	CESPK
4.0	http://www.iso9000.spk.usace.army.mil/docs/appen4.pdf	CESPK-ED-E
4.0	EEB-PhoneList.doc	CESPK-ED-E
6.1.2 2)	http://www.hnd.usace.army.mil/techinfo/index.htm	CEHND
6.1.2 2)	http://hq.environmental.usace.army.mil/tools/tools.html	USACE
6.1.2 3)	Innovative Technology.doc	Roger Henderson
6.1.4.1 2)	qcp_text.doc	CESPK-ED-EH
6.1.4.1 2)	qcp_plan.doc	CESPK-ED-EH
6.1.4.2	Guidance for preparation of SHP & SSHP.doc	David Elskamp
6.1.4.3 & 6.2.2	CDQM.doc	Pam Wehrman
Table 1	TSKORSOP.doc	CESPK-ED-EA
6.2.3	http://www.usace.army.mil/inet/centers/mcx/htrw/htrw.pdf	MCX