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DISASTER RECOVERY PLAN FOR HANDI 2000 BUSINESS MANAGEMENT SYSTEM

Dawn E. Adams, FDH
2355 Stevens, MSIN G1-21
Richland, WA 99352
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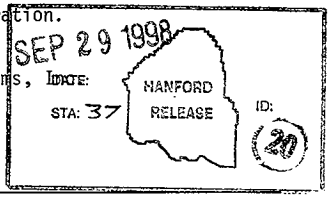
Abstract: The HANDI 2000 Disaster Recovery Plan (DRP) will provide direction for the recovery of the HANDI 2000, hardware, software and data in the even of a disaster that damages all or part of the computer equipment. This plan will make use of existing disaster recovery plans currently in place at Hanford where applicable and contains a complete list of hardware and software needed to run the HANDI 2000 systems. ...



W. L. Burkland 9/29/98
Release Approval Date Release Stamp

Approved For Public Release

DISASTER RECOVERY PLAN

FOR

HANDI 2000

BUSINESS MANAGEMENT SYSTEM

Prepared by: Thomas J. Kuyper, LMSI Software Engineer

Prepared for: Fluor Daniel Hanford

Approved by:

Steve Manley, FDH/CIO Manager	9/29/98 Date
Robert E. Gates, H2K Project Director	9/28/98 Date
J. D. Harris, LMSI Operations and Support Manager	9.23.98 Date
Dale E. McElroy, LMSI Telecommunications and Network Engineering Manager	9/22/98 Date
Dawn E. Adams, BMS Project Manager	9/2/98 Date
Phillip B. (Brian) Isaacs, LMSI Project Manager	9/8/98 Date
Kristina Whiteaker, INDUS Project Manager	9/17/98 Date

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1 INTRODUCTION

The Hanford Data Integration 2000 (HANDI 2000) Project will result in an integrated and comprehensive set of functional applications containing core information necessary to support the Project Hanford Management Contract. It is based on the Commercial-Off-The-Shelf (COTS) product solution with commercially proven business processes. The PassPort (PP) software is an integrated application for Accounts Payable, Contract Management, Inventory Management, and Purchasing. The PeopleSoft (PS) software is an integrated application for General Ledger, Project Costing, Human Resources, Payroll, Benefits, and Training. The implementation of this set of products, as the first deliverable of the HANDI 2000 Project, is referred to as Business Management System (BMS) and Chemical Management.

1.1 OVERVIEW

The BMS production implementation will be complete by October 01, 1998 and the server environment will be comprised of two types of platforms. The PassPort Supply and the PeopleSoft Financials will reside on UNIX servers and the PeopleSoft Human Resources and Payroll will reside on Microsoft NT servers. Because of the wide scope and the requirements of the COTS products to run in various environments backup and recovery responsibilities are divided between two groups in Technical Operations. The Central Computer Systems Management group provides support for the UNIX/NT Backup Data Center, and the Network Infrastructure Systems group provides support for the NT Application Server Backup outside the Data Center.

The disaster recovery process is dependent on a good backup and recovery process. Information and integrated system data for determining the disaster recovery process is identified from the Fluor Daniel Hanford (FDH) Risk Assessment Plan, Contingency Plan, and Backup and Recovery Plan, and Backup Form for HANDI 2000 BMS.

Reference the following procedures:

HNF-PRO-311, Functional Security Requirements/Application Development
HNF-PRO-592, Unclassified Computer Security Management Control Process
HNF-PRO-596, Certifying Sensitive or Essential Computer Applications
HNF-PRO-597, Preparing Contingency Plans and Disaster Recovery Plans
HNF-2858, HANDI 2000 Backup and Recovery Plan

1.2 PURPOSE

The HANDI 2000 Disaster Recovery Plan (DRP) will provide direction for the recovery of the HANDI 2000, hardware, software and data in the event of a disaster that damages all or part of the computer equipment. This plan will make use of existing disaster recovery plans currently in place at Hanford where applicable and contains a complete list of hardware and software needed to run the HANDI 2000 systems. This DRP will provide guidelines on how to reduce risk of personal injury, limit damage to facilities, hardware, software, program applications, and data. The plan provides recovery procedures and an inventory of resources to be used for the rapid restoration of onsite computer services following a disaster. This document is not meant to replace existing procedures but to augment them.

When notice is available of an impending event that is likely to significantly disrupt controlled computer facility operations, advance actions will be taken to reduce risk of personal injury, limit damage, and enhance an orderly shutdown. The appropriate steps depend on the nature of the anticipated event but generally include the steps listed in section *5.0 DISASTER RECOVERY RESPONSIBILITIES.*

1.3 SCOPE

The DRP covers all hardware, operating systems, and software needed to operate the HANDI 2000 systems in all locations at the Hanford Site. This plan does not cover disaster recovery for systems that feed the BMS system. Individual departments responsible for those systems are also responsible for their disaster recovery.

1.4 ACRONYM DEFINITIONS

Acronym	Definition
BMS	Business Management System
COTS	Commercial off the Shelf
DRP	Disaster Recovery Plan
FDH	Fluor Daniel Hanford
HANDI 2000	Hanford Data Integration (Year 2000 compliant)
HLAN	Hanford Local Area Network
LMSI	Lockheed Martin Services, Incorporated
MS	Microsoft
NT	New Technology
PP	PassPort
PS	PeopleSoft
WAN	Wide Area Network

1.5 REFERENCES

HNF-PRO-311	Functional Security Requirements/Application Development
HNF-PRO-592	Unclassified Computer Security Management Control Process
HNF-PRO-596	Certifying Sensitive or Essential Computer Applications
HNF-PRO-597	Preparing Contingency Plans and Disaster Recovery Plans
HNF-2858	HANDI 2000 Backup and Recovery Plan
Technical Operations	Computer Systems Management Disaster Recovery Plan
Technical Operations	Network Infrastructure Systems Area Server Report
Appendix A	List of Recovery Members
Appendix B	First Recovery Meeting
Appendix C	Initial Damage Assessment for Computer Facility
Appendix D	Second Recovery Meeting
Appendix E	Computer Operations
Appendix F	Production Control
Appendix G	List of Essential Applications
Appendix H	Technology Checklist
Appendix I	Minimum Configuration for Processing BMS Applications
Appendix J	Telecommunications Facilities Restoration Priorities
Appendix K	Facility Security
Appendix L	LMSI Finance
Appendix M	Computer Technical Support

2 ROLES AND RESPONSIBILITIES

2.1 PROCESS OWNER

- Notify Software Engineer of required system changes
- Notify Software Engineer of changes in disaster recovery requirements
- Contact Software Engineer in the event of a disaster
- Determine the needs of the applications and plan appropriate contingency actions to be implemented
- Prepare contingency plan and operational procedures to operate during system unavailability. Alternate methods of processing (e.g., manual or local processors) should be considered if managed computer facility processing is not available. Offsite processing may not be the most expedient or desirable method of processing in the event of a disaster.
- Implement the contingency plan during the recovery process
- Identify, authorize and fund any action required by support for the respective applications, including preplanning, advance testing, etc.
- Implement application readiness with support from the Technical Operations (Computer Systems Management and Network Infrastructure Systems) as funded

2.2 SOFTWARE ENGINEER

- Determine department responsible for disaster recovery functions
- Forward recovery requests to appropriate department
- Annually review this plan for adequacy, hardware availability, and time to delivery for replacement hardware
- Modification of this plan

2.3 COMPUTER SYSTEMS MANAGEMENT

- Provide disaster recovery services for all systems in the Data Center
- Maintain a list of departmental disaster recovery personnel
- Maintain a list of assigned BMS responsible personnel with backup personnel and home, work, and pager numbers
- Annually test disaster recovery functions for the Data Center

2.4 NETWORK INFRASTRUCTURE SYSTEMS

- Provide disaster recovery services for all application servers outside the Data Center
- Maintain a list of departmental disaster recovery personnel
- Maintain a list of assigned BMS responsible personnel with backup personnel and home, work, and pager numbers
- Annually test disaster recovery functions for application servers

2.5 DISASTER RECOVERY MANAGER

- Ensures that advanced plans and required preparations for the emergency control room are accomplished and maintained on a current basis

2.6 DATA CENTER OPERATIONS MANAGER AND STAFF

- Reference Section 5.1

2.7 DISASTER RECOVERY TEAM MANAGER

Reference Section 5.2

2.8 RECOVERY TEAM MEMBERS

- Reference Section 5.3

3 DISASTER RECOVERY REQUIREMENTS

The requirements for disaster recovery are as follows:

- Restore a system, application, or file to any hardware platform provided platform meets minimum hardware and operating system requirements for that system, application, or file.
- Obtain replacement hardware in the event of a disaster that destroys existing hardware.

Reference to the following Appendices for Checklists to support requirement actions:

Appendix A	*List of Disaster Recovery Members*
Appendix B	*First Disaster Recovery Meeting*
Appendix C	*Initial Damage Assessment for Computer Facility*
Appendix D	*Second Disaster Recovery Meeting*
Appendix E	*Computer Operations*
Appendix F	*Production Control*
Appendix G	*List of Essential Applications*
Appendix H	*Technology Checklist*
Appendix I	*Minimum Configuration for Processing BMS Applications*
Appendix J	*Telecommunications Facilities Restoration Priorities*
Appendix K	*Facility Security*
Appendix L	*LMSI Finance*
Appendix M	*Computer Technical Support*

4 DISASTER RECOVERY PROCESS

This procedure describes the disaster recovery process for the BMS system. It is dependent on the knowledge and expertise of disaster recovery personnel in the Technical Operation departments at Hanford. If the Technical Operation departments have an approved disaster recovery procedure in place, the existing procedure will work in conjunction with this procedure.

4.1 DISASTER PREPARATION ASSUMPTIONS

- Disasters may result from but not be limited to: civil disturbance, earthquake, espionage, sabotage, explosion, fire, flood, riot, resource failure, snow storm, utility failure, vandalism, hurricane or high wind.
- Defining the scope of the disaster is a prerequisite for developing effective emergency plans. It may not be necessary to implement all of the checklists of the Disaster Recovery Plan.
- Total or partial loss of a managed computer facility requires total or partial relocation of personnel and/or equipment in order to maintain normal operations and to facilitate recovery.
- Emergency, temporary restoration of telecommunication access and availability of file servers will be accomplished by redirection of communications paths and use of spare or alternate file servers. This may temporarily impact customers of a lesser service level requirement.
- Normal protective services are provided by the Hanford Site security guards. If necessary, these services are augmented by the Department of Energy (DOE) and General Services Administration (GSA) protective services. In addition, there are supplementary training and voluntary services available.
- The amount of warning time prior to the disaster impacts the amount of planning and preparations that may be done beforehand.
- Standard evacuation plans and safety and security procedures are adhered to in the event of a disaster.
- Recovery requires the continuing productive capabilities and technical talents of all personnel.
- Risk assessments are prepared on all computers and updated every three years and when there is a change in the facility.

4.2 DISASTER TRAINING - EDUCATION

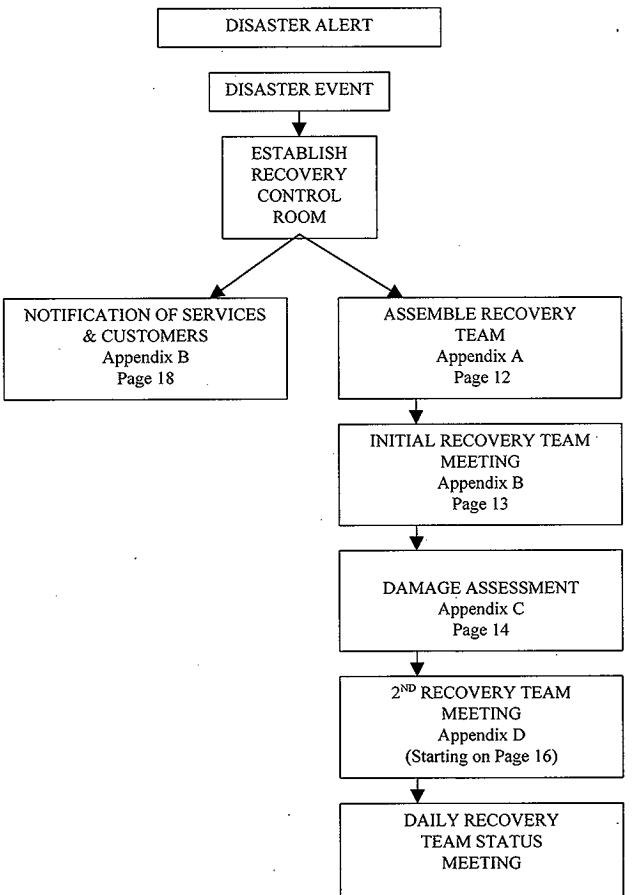
- The extent and quality of training undertaken by personnel largely determines the ability to survive a disaster with minimum personal injury and loss of resources. Training on building evacuation, emergency signals, fire extinguisher operation and bomb threat is given annually. Additional job specific safety and emergency training is given where appropriate. All personnel are given encouragement and assistance in acquiring emergency self-help information and training.
- Personnel training is the responsibility of line management.
- Desktop Disaster Recovery exercises are performed periodically to improve awareness of the Disaster Recovery Plan and provide a critique of the effectiveness of the plan itself.

4.3 EMERGENCY CONTROL ROOM

- If a controlled computer facility is seriously damaged, an emergency control room is established.
- The primary control room is room 202, 2261 Stevens, Richland. Personal computers, telephones and other facilities of nearby offices will be utilized. The secondary control room is in the 339A building, 300 area. The computer room and offices in the building will be utilized as needed.
- The Disaster Recovery Manager ensures that advanced plans and required preparations for the emergency control room are accomplished and maintained on a current basis.

4.4 RECOVERY FLOW

The following represents a functional flow of a recovery sequence. In order to ensure completeness, it assumes a disaster of such magnitude that management of recovery would require substantial duration and delegation of recovery functions. For any specific disaster, some functions will not be applicable and often functions can be combined under a single manager. The Disaster Recovery Team designs recovery plans using the appropriate elements of this general plan.



5 DISASTER RECOVERY RESPONSIBILITIES

5.1 OPERATIONS MANAGER AND STAFF

Data Center Operations Manager, or the on-duty Computer Operations Staff, is in the best position to react quickly to events that impact computer operation, and therefore, has the responsibility to initiate action as follows:

- **ENSURES THAT ACTION IS TAKEN TO PROVIDE FOR THE SAFETY OF PERSONNEL.**
- Ensures that action is taken to provide for appropriate Hanford Patrol coverage.
- Reports the situation, using the call lists.
- Directs interim activity to minimize damage to equipment and supplies.
- Contacts and briefs the Disaster Recovery Team Manager regarding the situation and establishes a preliminary base of operations, if required.
- If a disaster situation is declared ensures that all members of the Disaster Recovery Team are contacted and are directed to the preliminary base of operations.

  When contact is made with a team member, state the following, filling in the appropriate building and facility name:

  "A disaster condition has been declared in the ____ Building _____ Computer Facility. Report to - Room 202, 2261 Stevens, as quickly as possible."

  Do not wait to give further information.

- Directs recovery activity until the Disaster Recovery Team is assembled.
- Conducts the initial briefing of the Disaster Recovery Team.

5.2 DISASTER RECOVERY TEAM MANAGER:

The Disaster Recovery Team Manager is administratively responsible for the following:

- Ensuring the Disaster Recovery Plan is updated periodically to maintain its currency.
- Ensure that appropriate training is being given.
- Ensuring that team members are identified and that they are aware of their participation in the recovery function.
- When notice is received of an impending disaster, actions are taken to reduce risk of personal injury, limit damage, and enhance an orderly shutdown. The appropriate steps depend on the nature of the anticipated event. The following are examples of possible actions by the Disaster Recovery Team Manager:
  - Acts on behalf of Lockheed Martin Services Director in the event of a declared disaster.
  - Directs the recovery action and efforts of the recovery team.
  - Assign damage-limiting measures.
  - Decide at what point in the progression of events to proceed with shutdown and evacuation.
  - Advise the Director's Staff, Appropriate Disaster Recovery Team members and appropriate Safety, Security and Public Relations personnel of the pending event.
  - Occurrence Reporting and Processing of Operations Information.
  - Alert assignees to prepare to implement the following assignments when directed to do so by the Disaster Recovery Team Manager:
    - Ensure personnel are evacuated if appropriate.
    - Ensure damage-limiting measures on all computers and computer related hardware are taken.
    - Ensure computers, air conditioning, and electrical equipment is appropriately shut down.
    - Ensure security is provided for evacuated areas.
    - Notify assignees to implement assignments.

5.3 RECOVERY TEAM MEMBERS

Disaster Recovery Team Members are selected for their knowledge of key functional areas or organizations that would be required to provide quick recovery in the event of a disaster. Their responsibilities include:

- Be familiar with the disaster recovery plan and their expected contribution to the recovery process.
- Respond if called upon in the event of a disaster notification.
- Direct the recovery process in their area of responsibility.
- Provide status updates to the manager as requested.

6 APPENDIX

6.1 APPENDIX A LIST OF RECOVERY MEMBERS

This is a sample list of positions necessary for the post disaster recovery team. Due to the sensitive nature of home phone numbers, each department is responsible to maintain an ON CALL list of team responders and their backups for each position.

COMPUTER SYSTEM MANAGEMENT DISASTER RECOVERY TEAM

COMPUTER SYSTEM MANAGEMENT DISASTER RECOVERY TEAM			
		TELEPHONE NUMBER	
FUNCTIONAL AREA	NAME	HOME	WORK
MANAGER			
COMPUTER SYSTEMS MANAGEMENT			
COMPUTER OPERATIONS			
NT SUPPORT			
UNIX SUPPORT			
COMPUTER TECHNICAL SUPPORT ALTERNATE			
INFORMATION & SCIENTIFIC SYSTEMS			
FACILITIES			
BUSINESS MANAGEMENT ALTERNATE			
DATA NETWORK			
PRODUCTION CONTROL ALTERNATE			
SAFETY (300, 700 AREAS)			
SECURITY (BWP)			
TELECOMMUNICATIONS			

6.2 APPENDIX B INITIAL DISASTER RECOVERY TEAM MEETING

This section contains a checklist agenda, general checklists to be utilized by Recovery Team Member and hardware information for the first recovery team meeting held after the notification of a disaster is received.

INITIAL DISASTER RECOVERY TEAM MANAGER FIRST RECOVERY TEAM MEETING CHECKLIST

INITIAL DISASTER RECOVERY TEAM MEETING CHECKLIST			
ACTION	**ASSIGNED TO**	**ESTIMATED CONCLUSION**	**COMPLETE**
ENSURE PERSONNEL SAFETY	Team	This meeting	
Review status of disaster alert and notification actions	Team	This meeting	
Review status of computer facility	Team	This meeting	
Assign responsibility for damage assessment. ! Facilities ! Computer Equipment ! Printers ! Form Storage ! Telecommunications Equipment	Ops Mgr/ Fac	This meeting	
Assign responsibility for implementing recovery control room	Fac	This meeting	
Assess damage to communication and security systems	Team	This meeting	
Set time for completion of damage assessment and next meeting	Team	This Meeting	

Fac-Facilities Team-Disaster Recovery Team
Ops Mgr-Operations Shift Manager

6.3 APPENDIX C INITIAL DAMAGE ASSESSMENT FOR COMPUTER FACILITY

The Computer Operation's members of the Disaster Recovery Team are responsible for the following operating areas during the disaster recovery process. The damage will be assessed in detail and in coordination with other Disaster Recovery Team members as required. Each department is responsible to maintain a list of equipment in their various areas of responsibility.

INITIAL DAMAGE ASSESSMENT CHECKLIST-COMPUTER ROOM

INITIAL DAMAGE ASSESSMENT CHECKLIST				
COMPUTER ROOM Location: _____				
EQUIPMENT	OPER-ABLE	PART. OPER.	NOT OPER.	COMMENTS
Electrical Service				
Air Conditioners				
Consoles and PC				
File Servers				
Fire Control System				
Telecommunications Equipment				
Magnetic Tape Equip.				
Terminals				
Copier				
Shredder				
Other Equipment in Area from Equipment list				

INITIAL DAMAGE ASSESSMENT CHECKLIST-MISCELLANEOUS EQUIPMENT

INITIAL DAMAGE ASSESSMENT CHECKLIST				
MISCELLANEOUS EQUIPMENT Location: _____				
EQUIPMENT	OPER-ABLE	PART. OPER.	NOT OPER.	COMMENTS

6.4 APPENDIX D SECOND DISASTER RECOVERY TEAM MEETING

This section contains a checklist agenda, general checklists to be utilized by Recovery Team Member and hardware information for the second recovery team meeting held after the notification of a disaster is received.

SECOND DISASTER RECOVERY CHECKLIST

SECOND DISASTER RECOVERY CHECKLIST			
ACTION	**ASSIGNED TO**	**ESTIMATED CONCLUSION**	**COMPLETE**
ENSURE PERSONNEL SAFETY	Team		
Obtain and integrate functional damage assessments.	Team	This meeting	
Identify and quantify remaining production capability of the computer center that can be available for production in a few days.	Team	This meeting	
Identify jobs that were interrupted during processing.	Prod Ctrl	This meeting	
Decide which essential applications can be processed in the data center.	Prod ctrl/Tech	This meeting	
Identify the cleanup and repair required to support production.	Team	This meeting	
Assign responsibility for making the computer center ready including: ! Cleanup ! Structural repair ! Utilities available ! Equipment replacement or repair ! Furniture ! Communications circuits and equipment	Team	This meeting	
Assign responsibility for computer center production preparation and restart. ! Backup software and applications ! Backup documentation ! Supplies, forms, etc. ! Schedules ! Technical support ! Operators	Team	This meeting	
Identify additional production capacity requirements by program.	Team	This meeting	
Assign responsibility to locate and negotiate for additional capacity required.	Team	This meeting	

SECOND DISASTER RECOVERY CHECKLIST			
ACTION	**ASSIGNED TO**	**ESTIMATED CONCLUSION**	**COMPLETE**
Assign responsibility to: ! Keep recovery records ! Track action assignments ! Maintain disaster & recovery history ! Collect data & maintain displays in recovery control room ! Prepare Unusual Occurrence Report	Team	This meeting	

Prod Ctrl-Production Control
Team-Disaster Recovery Team
Tech-Technology

DISASTER RECOVERY GENERAL CHECKLIST

DISASTER RECOVERY GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY.	Manager		
Notify all customers.	Sys Admin		
Establish emergency control room.	Fac		
Assess and record extent of damage.	Fac/Oprs/Vend/ Telecom/ Sys Admin		
Determine remaining capability and capacity.	Fac/Oprs/Vend/ Telecom/ Sys Admin		
Determine what applications will process on remaining capacity.	Tech/Sys Admin/ Prod Ctrl		
Establish job recovery priorities.	Prod Ctrl		
Prepare computer and communications hardware replacement list.	Tech/Vend/ Telecom		
Ascertain how soon the replacement hardware will be available.	Procurement/ Vend		
Ascertain if there is floor space available for replacement hardware.	Fac		
Ascertain if alternate-processing capability is required.	Team		
Define amount and type of work to be off-loaded.	Tech/Prod Ctrl		
Designate an alternate or off load leader.	Manager		
Assign personnel required to process applications at remote site.	Manager		
Make appropriate arrangements to move applications to alternate site.	Manager		
Start facility restoration.	Facilities		
Prepare and process purchase orders.	Support Serv		
Contact vendor and supply sources.	Procurement		
Start restoring communications - data.	Telecom		
Start restoring telephone - voice.	Telecom		

DISASTER RECOVERY GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
Start restoring operating systems.	Tech		
Start restoring production systems.	Prod Ctrl/Tech		
Start restoring data.	Prod Ctrl/Tech		
Pick up input/deliver output	Oprs		

Fac-Facilities Tech-Technology
Prod Ctrl-Production Control Telecom-Telecommunications
Oprs-Operations Vend-Vendor
Sys Admin-System Administrator

DISASTER RECOVERY ALTERNATE PROCESSING CHECKLIST

DISASTER RECOVERY ALTERNATE PROCESSING CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Identify and make arrangements with an alternate site.	Info & Sc Sys/Ops/Prod Ctrl		
Identify systems/applications to be off-loaded.	Info & Sci Sys/Prod Ctrl/Customers		
Define computer and communications hardware requirements for each off-load item.	Info & Sci Sys/Tech/ Telcomm		
Locate potential off load locations based on hardware requirements.	Oprs/Tech		
Notify off load sites of status and requirements.	Prod Ctrl/Tech		
Retrieve backup systems tapes for sending to alternate location.	Tape Lib		
Generate a new system if required and test at off load site.	Tech		
Assemble all necessary resources for processing identified work at alternate site. ! Recall JCL, load modules, data libraries, disk files, tape files, data input, RJE input, key personnel	Info & Sci Sys/Prod Ctrl/Ops		
Arrange Transportation ! Local ! Off Site	Ops/Prod Ctrl		
Staffing	Info & Sci Sys/Tech/Prod Ctrl/Telecom		
Supplies	Oprs		

Info & Sci Sys-Information And Scientific Systems Tape Lib-Tape Librarian
Prod Ctrl-Production Control Tech-Technology
Oprs-Operations Telecom-Telecommunications
Sys Admin-System Administrator Vend-Vendor

6.5 APPENDIX E COMPUTER OPERATIONS

The Computer Operations member of the Disaster Recovery Team represents Computer Operations and Tape Library. This appendix provides a general checklist that provides directions and serves as reminders of actions to take and situations to review. The Contact List maintained by each department is used to notify key personnel of the disaster and direct them to the proper location to assist in the recovery action.

COMPUTER OPERATIONS GENERAL CHECKLIST

COMPUTER OPERATIONS GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Prepare impact status report.			
Coordinate the inspection of the following with Facilities personnel: a. Structural damage to the building b. Machine room raised floor area c. Electrical power (e.g., switch gear, transformers) d. Motor generators e. Lighting f. Water g. Air conditioning h. Chemicals i. Fire detection/protection system			
Define safety hazards; provide for safety and protection of all personnel during and following the disaster.			
Ensure that current access policy to machine rooms is maintained.			
Initiate immediate action for special surveillance of proprietary data.			
Check status of the hardware. Coordinate with vendors, system administrator.			
Identify damaged resources.			
Identify operational resources.			
Ascertain if the operational resources are sufficient to continue processing.			
Ascertain the extent of damage.			
Establish and maintain status boards and logs relative to the disaster.			
Coordinate with vendors for estimated times to repair.			

COMPUTER OPERATIONS GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
Identify the components that require replacement.			
Assess and document the disaster impact. Furnish the report to appropriate Disaster Recovery Team members.			
Forward all inquires from those involved in the disaster recovery process to the Disaster Team Manager.			
Pull recovery records, as required, from Operations: a. Configuration Logical Layouts b. Physical Layout of Facilities (floor plans). c. Work Center Procedures			
Coordinate with System Administrator (SA) to define status of software: a. Have the systems packs been destroyed or damaged? b. Coordinate with SA to rebuild system.			
If appropriate, direct Tape Librarians to pull operating system and application recovery tapes as required from the Record Center and the 2261 Building.			
Coordinate with Production Control to evaluate job-processing status when the service was interrupted and to prioritize work on remaining resources.			
Arrange special transportation for data and output products (trucks, taxi, and special delivery services).			
Establish or expand controls to protect all customer data within the organization's jurisdiction.			
Coordinate with Production Control to determine if off load or alternate processing is required.			
Acquire the tools required for alternate operations (work center logs, checklists, procedures).			
Coordinate with Information & Scientific Systems to define status of jobs to be run at alternate sites: a. Is backup complete? b. Is backup current? c. Are procedures available for updating from available backup? d. Are procedures available for alternate processing? e. Are ECL/JCL changes necessary for compatibility?			

COMPUTER OPERATIONS GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
f. Are special report forms needed?			
Coordinate with the backup sites for arrangement for machine time.			
Prepare staffing plan for all work centers to support disaster recovery-provide for 24-hour coverage.			
Prepare staffing plan to support any alternate processing.			
Make transportation arrangements for people, data, and supplies for alternate processing.			
Alert vendors for need of special support and services.			
Coordinate with CIO office for replacement of equipment, supplies and facility to provide recovery.			
Coordinate with other Disaster Recovery Team members for notification and communication with customers as to impact of disaster on their application: a. Provide estimate of time to recover to normal processing. b. Set up means to provide customers status of recovery activity.			
Perform inventory of the work centers; include tools and special equipment: tapes, disks, bursters (forms), paper stock, decollators, special forms, packaging supplies, ribbons, procedures.			
Coordinate with Telecommunications and Technical Support for checkout and/or restoration of the communications network.			
Coordinate with Production Control to develop a recovery schedule based on available resources and priority of workload.			
Coordinate with Production Control for materials required for job execution -- JCL, load modules, data libraries, disk files, tape files, procedures.			
Coordinate special transportation arrangements.			
Coordinate with Property Administrator for current listing and location of equipment within the Hanford area.			
Coordinate with Prod. Control to develop a recovery schedule.			

6.6 APPENDIX F PRODUCTION CONTROL

The Production Control member of the Disaster Recovery Team represents Production Control Staging, Scheduling and System Recovery. This appendix provides a series of checklists and special instructions. The checklists and special instructions provide directions and serve as reminders of actions to take and situations to review. The Contact List maintained by each department is used to notify key personnel of the disaster and direct them to the proper location to assist in the recovery action.

PRODUCTION CONTROL GENERAL CHECKLIST

PRODUCTION CONTROL GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Establish a base of operations for: a. Production Control & Scheduling b. System Recovery c. Applications Analysts			
Coordinate with communications for required telephone communications.			
Notify a sub-team of Production Control to be on standby.			
Review staffing for additional support (Analyst Call Lists). a. Production Control b. System Recovery c. Applications Analysts			
Review production work in progress and work schedule. Distribute information to Computer Operations Manager, Recovery, Scheduling, Information & Scientific Systems.			
Develop a preliminary assessment of status of in-house jobs (processing required, resource estimates, etc.) to be furnished to the Disaster Recovery Team members.			
Identify the critical applications by day. Distribute information to Computer Operations Manager, Recovery, Scheduling, Information & Scientific Systems.			
Make an assessment of the applications that will have to be run. Review job-to-job feeds and data set retention.			
Determine from other Disaster Recovery Team members if the applications will be run on site after a computer center fix or if off load will be required because of lengthy down time.			
Call program managers/supervisors for analyst support on specific applications.			

PRODUCTION CONTROL GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
Have program managers contact the clients on any off load situations and project a due-out time.			
Keep Disaster Recovery Team Manager informed.			
Coordinate with Facilities for off load locations and configurations.			
Coordinate with SA on software packages available.			
Obtain most current list of essential applications. If none, used attached one.			
Develop an emergency schedule based on resource availability.			
Obtain recovery documents for essential applications.			
Determine resource requirements for essential applications. Include scratch tape requirements.			
Notify Recovery Team Manager of resources required for essential applications.			
Prepare and give Operations a list of tapes required from the tape vault or Record Center.			
Obtain necessary program backup tapes.			
Verify availability and packaging of input tapes and output tapes.			
Arrange off load activities per General Checklist.			
Initiate recovery actions on the processes deemed critical by the Production Control Manager.			
Locate required input data for the critical applications.			
Call program managers/supervisors for analyst support on specific applications.			

RECOVERY GENERAL CHECKLIST

RECOVERY GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Initiate recovery actions on the processes deemed critical by the Production Control Manager.			
Locate required input data for the critical applications.			
Call program managers/supervisors for analyst support on specific applications.			

6.7 APPENDIX G LIST OF ESSENTIAL APPLICATIONS

Application Managers through FY98. Application managers for post implementation TBD.

LIST OF ESSENTIAL APPLICATIONS 03/04/98

APPLICATION NAME	APLICATION MANAGER	PLATFORM
Production Oracle	Computer Systems Manager	HP UNIX
Indus PassPort Database	FDH Supply Implementation Lead	HP UNIX
PeopleSoft Financial Database	FDH Finance Implementation Lead	HP UNIX
Indus PassPort Client	FDH Supply Implementation Lead	HP UNIX
PeopleSoft Financials Client	FDH Finance Implementation Lead	NT SERVER
HRIS PeopleSoft Database	FDH HR/Payroll Implementation Lead	NT SERVER
HRIS PeopleSoft Client	FDH HR/Payroll Implementation Lead	NT SERVER
P3 Primavera	FDH Project Planning Lead	NT SERVER

6.8 APPENDIX H TECHNOLOGY CHECKLIST

The Technology member of the Disaster Recovery Team is responsible for the following during the recovery process:

- Operating System Technology
- Database Administration/On-line Technology
- Systems Integration

The Contact List is used to notify key personnel of the disaster and direct them to the proper location to assist in the recovery action.

TECHNOLOGY GENERAL CHECKLIST

TECHNOLOGY GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Establish a technical support team of required disciplines.			
Estimate remaining capacity and capability.			
Define amount and type of off load.			
Design configurations from remaining equipment.			
Build operating systems for remaining configuration and off load target computers.			
Restore packs as required.			
Assign personnel to off load sites as required.			
Assign personnel to extra shift coverage as required.			
Establish a plan for full restoration of service.			
Perform any other duties as requested by Disaster Recovery Team Manager.			

6.9 APPENDIX I MINIMUM CONFIGURATION FOR PROCESSING BMS APPLICATIONS

MINIMUM CONFIGURATION FOR PROCESSING ESSENTIAL APPLICATIONS IN A DISASTER ENVIRONMENT

APPLICATION: HANDY H2K UNIX

COMPONENT

HARDWARE:
- HP9000 K CLASS SERVER
  - 12GB DISK SPACE INTERNAL
  - 2 GB RAM
  - EMC SYMMETRIX 3430:
  - 108 GB USEABLE, 1GB CASHE

SOFTWARE:
- HP-UX 10.20
- ORACLE 7.3.2 AND 7.3.3
- MICRO FOCUS COBOL 4.0 AND 4.1
- PEOPLESOFT 7.0
- PASSPORT 6.1
- ANSI C

APPLICATION: P3 PRIMAVERA

COMPONENT

HARDWARE
- HP LH2 SERVER
  - 256 MEG MEMORY
  - NET RAID CONTROLLER
  - 45 GIGABYTE DRIVE SPACE

SOFTWARE
- MICROSOFT NT 4.0
- P3 PREMAVERA

APPLICATION: HRIS / PAYROLL

COMPONENT

HARDWARE
- 2 HP LH3 SERVER
  - 384 MB RAM
  - 2 400 MHZ PII PROCESSORS
  - 8.5 GB DISK MIRRORED
- 1 HP LX/PRO 200 4 PROCESSOR
  - 2.5 MB RAM
  - 4 200 MHZ PENTIUM PRO W 1M CACHE
  - 89 GB DISK

1 COMPAQ PROLIANT
P166 W 512 MB CACHE
50 GB DISK
64 MB RAM

SOFTWARE
MICROSOFT NT 4.0
MICROSOFT SQL SERVER
PEOPLESOFT 7.0

APPLICATION: APPLICATION SERVERS

COMPONENT

HARDWARE
HP PENTIUM PRO 200 SERVER
128 MEG MEMORY
NET RAID CONTROLLER
20 GIGABYTE DRIVE SPACE

SOFTWARE
MICROSOFT NT 4.0
PEOPLESOFT CLIENT SOFTWARE
PASSPORT CLIENT SOFTWARE

APPLICATION: CA UNICENTER

COMPONENT

HARDWARE
HP PENTIUM PRO 200 SERVER
128 MEG MEMORY
NET RAID CONTROLLER
16 GIGABYTE DRIVE SPACE

SOFTWARE
MICROSOFT NT 4.0
MICROSOFT SQL SERVER
CA UNICENTER

6.10 APPENDIX J TELECOMMUNICATIONS FACILITIES RESTORATION PRIORITIES

The Telecommunications member of the Disaster Recovery Team assesses the extent of damage to the telephone and network facilities. The following network restoration priorities are observed.

1. Dial-up Communications are restored by the telephone vendor and/or Plant Telephone as soon as physically possible.

2. The Remote Access System (RAS) is restored as soon as possible after the Telecommunications Recovery Team is in place.

3. The Microwave System is restored as soon as possible after the Telecommunications Recovery Team is in place.

4. The Hanford Wide Area Network (WAN) consisting primarily of fiber optic, Ethernet and broadband data communications systems, with associated electronics are restored after the Recovery Team has established dial-up service and the Microwave System is operational.

5. The managed computer facility switching equipment, multiplexers, dedicated circuits, modems and front-end processors are restored as soon as possible to support dial-up access.

The On-Call List is used to notify key personnel of the disaster and direct them to the proper location to assist in the recovery action.

TELECOMMUNICATIONS GENERAL CHECKLIST

TELECOMMUNICATIONS GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Develop an estimate of the damage sustained by the network and initiate recovery action.			
Alert the communication specialists. Advise them of the nature of the problem, extent of damage, if known, and request maximum practical assistance in expediting recovery.			
Alert the telephone vendor personnel for required support.			
Assess the damage to terminals and coordinate the requests for appropriate service.			
Brief the Disaster Recovery Team Manager on results of assessments, status of recovery effort and unusual problems requiring higher management knowledge or participation.			
Establish communications link between required facilities (radio, telephone, messenger, etc.).			
Coordinate with communications personnel on data transmission line links (missing, required, etc.).			
Develop schedule and staffing plans for sustained recovery effort.			
Observe priorities established by the Disaster Recovery Team Manager.			

6.11 APPENDIX K FACILITIES / SECURITY

The Facilities and Security members of the Disaster Recovery Team participate in the initial damage assessment, and initiate and coordinate the necessary emergency action to restore the damaged facility to a usable condition. Temporary facilities, including a control room for recovery activities, are identified, if the current computer facility is not usable. The Facility team member identifies space as needed in addition to the alternate emergency control rooms. The Security team member ensures that proper security measures have been identified and are in place.

This appendix contains checklists and instructions for emergency and on-going action. The Contact List is used to notify key personnel of the disaster and direct them to the proper location to assist in the recovery action.

FACILITIES/SECURITYGENERAL CHECKLIST

FACILITIES/SECURITY GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Participate in assessment of all damage. a. Structural b. Power c. Utilities d. Communications e. Computers f. Data storage g. Air conditioners h. Fire protection i. Physical security			
Establish emergency safety policies.			
Establish emergency security policies.			
Take restorative action: a. Structural b. Power c. Utilities d. Communications			

FACILITIES/SECURITY GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
e. Computer f. Data storage g. Air conditioning h. Fire protection i. Physical security			
Provide recovery control room meeting the specifications noted on RECOVERY CONTROL ROOM CHECKLIST			
Support Operations functions (on request)			
Identify alternate site requirements.			
Provide alternate site support.			
Keep Disaster Recovery Team Manager informed.			

FACILITIES/SECURITYRECOVERY CONTROL ROOM CHECKLIST

FACILITIES/SECURITY RECOVERY CONTROL ROOM CHECKLIST	
REQUIREMENTS	**SOLUTION**
Convenient central location	
Floor space (approx. 12 x 20)	
Wall space for charts, maps, diagrams (150 sq. ft.)	
Communications a. Mail service b. Telephone (2 outside lines)	
Furnishings a. 2 Desks b. Work table c. Personal Computer/printer d. File cabinet e. Chairs (12 or more)	
Security	
Computer Systems Management Disaster Recovery Plan	

6.12 APPENDIX L FINANCE

The Finance Administration member of the Disaster Recovery Team assists the Disaster Recovery Team Manager with the preparation of a financial impact status report defining in detail the cost of the disaster and what acquisitions are needed to recover.

The Checklist serves as a guide and worksheet for recovery activities. The Contact List is used to notify key personnel of the disaster and direct them to the proper location to assist in the recovery action.

FINANCE GENERAL CHECKLIST

FINANCE GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Assist Operations with the preparation of a financial impact status report and estimate needed equipment/software/supplies and recovery costs.			
Work with FDH and DOE Finance to arrange funding for emergency requirements and replacement requirements.			
Coordinate with Technology to ensure that machine accounting is collected on alternate processing.			
Coordinate with Operations on the collection of manual machine accounting.			
Track and report all costs associated with recovery.			
Retrieve vital financial records from the Record Center as needed.			
Keep the Disaster Recovery Team Manager informed.			

6.13 APPENDIX M COMPUTER TECHNICAL SUPPORT

The Computer Technical Support Members of the Disaster Recovery team establishes communications with the HLAN and Mainframe Computer users to assist them with recovery of their computing capabilities. The Computer Technical Support Members will answer inquiries from customers, provide them with status information and report user damage assessment and impacts to the Disaster Recovery Team Manager.

COMPUTER TECHNICAL SUPPORT GENERAL CHECKLIST

COMPUTER TECHNICAL SUPPORT GENERAL CHECKLIST			
ACTION	**ASSIGNED TO**	**ECD TIME/DATE**	**COMPLETE TIME/DATE**
ENSURE PERSONNEL SAFETY			
Establish an End User Support activity to support the disaster recovery activity (e.g., handle all inquiries from those not involved in the disaster recovery).			
Coordinate requests for terminal and personal computer repairs. See Repair Service Listing for repair service vendors.			
Establish Point of Contacts with user groups to keep them informed and disseminate information, as it becomes available.			