Department of Energy
Washington, DC 20585

November 25, 1997

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

This transmits the Fourth Quarterly Report of progress in implementing your Recommendation 94-3 about upgrades to the Rocky Flats plutonium storage facility. Progress continued during the quarter with the completion of the Basis for Interim Operations (BIO) for Building 371, resolution of review comments, submittal of an Implementation Plan for the BIO, and approval of an Authorization Agreement for Building 371. Additionally, conceptual design for a new Interim Storage Vault (ISV) was completed. Copies of the Authorization Agreement and the ISV Conceptual Design Report are enclosed.

Substantial progress was made in completing the Building 371 priority safety upgrades with eight of the fifteen projects complete, and five more on-track for a December 1997 completion. Completion of the remaining two projects will be delayed because of operational impacts with installation and redesign. A new schedule for completion of these projects is being developed. Additional detail is provided in the quarterly report.

This quarterly report was prepared before consideration of your letter of October 15, 1997, on this recommendation. The Department will respond separately to that letter.

Sincerely,

Alvin L. Alm
Assistant Secretary for
Environmental Management

Enclosures
W/O Enclosures
cc:
Mark Whitaker, S-3.1

Attachment 1
97-RF-05565
12 pages

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

DEFENSE NUCLEAR FACILITIES SAFETY BOARD RECOMMENDATION 94-3

FOURTH QUARTERLY REPORT

Classified By: [signature]

Date : 10-21-97

October 1997

EXECUTIVE SUMMARY

This periodic report provides an update on progress with implementation of the Defense Nuclear Facility Safety Board (DNFSB) Recommendation 94-3. Recommendation 94-3 involves seismic and safety upgrades to the Rocky Flats plutonium storage facility. The Department of energy prepared and transmitted to the DNFSB an Integrated Program Plan (IPP) which made several commitments for future actions and decisions. Progress on those actions and results of decisions are reported in this fourth quarterly report.

DOE-RFFO and Kaiser-Hill (K-H) signed an Authorization Agreement for Building 371 on September 11, 1997, consistent with the commitment made in the recovery plan presented in the second quarterly report. This formal contractual document approves the new Authorization Basis (AB) for the facility, authorizes its implementation, and defines conditions applicable to assuring safe implementation. The new Authorization Basis is in the form of a robust Basis for Interim Operations (BIO). The Authorization Agreement is the culmination of efforts to prepare the BIO Implementation Plan (BIO-IP), the BIO itself, and the Department's Review Report for the BIO.

The BIO-IP, Revision 0, was completed and transmitted to DOE-RFFO on August 20, 1997. The BIO-IP provides for a phased implementation of the new AB. DOE-RFFO requested and K-H agreed to the BIO becoming the AB of record for all Building 371/374 Complex activity by August 1, 1998; this date is the new targeted completion for IPP milestone 3-3. The BIO-IP will be revised in October to incorporate Revision 2 of the BIO and DOE-RFFO comments, including acceleration of implementation of selected Administrative Controls judged to afford substantial improvement over current controls.

Revision 2 of the building 371/374 Complex BIO was completed and delivered to DOE-RFFO on September 10, 1997. This revision resolves the final comments from DOE-RFFO generated during preparation of their Review Report and incorporates corrections identified during finalization of the BIO-IP.

DOE-RFFO issued their Review Report for Revision 2 of the BIO on September 10, 1997. The Review Report summarized the Department's bases for approval of the BIO. There are no directed changes since comments were resolved by Revision 2. Appendix B, however, highlights issues derived from BIO-identified risk-dominant scenarios and requires evaluation of potential measures to achieve further risk reduction prior to the next annual update.

Substantial progress was made in completing the Building 371 priority safety upgrades specified in Table 3-1 of the IPP. Seven additional upgrades were completed so that eight of the fifteen are now in place. Progress on five of the remaining upgrades affords high confidence that they will be completed by December of 1997 per IPP milestone 3-2. Of the remaining two, one appears likely to be extended due to the operational impacts associated with its implementation (sequential shutdown of exhaust filter plenums is required), while the other required a new alternative study when the previously preferred option proved impractical (the supply Isolation Valve approach relied upon backdraft dampers found to be faulty). A new firm schedule for these upgrades is being developed. Additional BIO-required upgrades have been identified and their completion in FY-98 and FY-99 is scheduled in the BIO-IP, completing IPP milestone 3-4.

DOE decided in September that it would be inappropriate to defer the Safety Margin Upgrades based on the criteria specified in the IPP (i.e., to decide not to begin until FY-99 per the footnote in IPP milestone 3-5a). Additional assurance that adequate progress is being made toward early off-site shipment of Site special nuclear material was judged to be warranted to justify deferral. On the other hand, initiating work immediately was judged to entail an inappropriate impact on BIO and BIO-driven upgrade implementation. DOE-HQ is addressing the issue of the safety Margin upgrades, and will report the resolution to the DNFSB in a separate communication.

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1.0 PROGRAM ORGANIZATION

This section corresponds to section one of the IPP. It addresses key changes to the organization identified in that section as modified in subsequent quarterly reports. There have been no changes to the organization presented in the second quarterly report.

2.0 BUILDING 371

This section corresponds with Section 3 of the IPP that focusses on "Goal 1: Establish safe operation of Building 371 in conformance with an updated Authorization Basis (AB)." The following Goal 1 Objectives are specifically addressed: "Provide an updated Building 371 AB, complete definition and implementation of necessary upgrades in Building 371, and establish building operations in conformance with the updated AB."

2.1 Accomplishments and Status Summary

2.1.1 Building 371 Authorization Basis (AB)

The Rocky Flats Environmental Technology Site (Site) continued to make progress toward the achievement of milestone 3-3, "Establish and document operation of Building 371 in conformance with an updated AB by December 1996." DOE-RFFO and Kaiser-Hill (K-H) signed an Authorization Agreement for the Building 371/374 Complex on September 11, 1997, consistent with the commitment made in the recovery plan presented in the second quarterly report. This formal contractual document approves the new AB for the facilities, authorizes its implementation, and defines conditions applicable to assuring safe implementation. The new AB is in the form of a robust Basis for Interim Operation (BIO). The Authorization Agreement is the culmination of efforts to prepare the BIO Implementation Plan (BIO-IP), the BIO itself, and the Department's Review Report for the BIO.

The BIO-IP, Revision 0, was completed and transmitted to DOE-RFFO on August 20, 1997. The BIO-IP provides for implementation of the new AB in four phases, beginning with those Safety Management Programs most consistent with current practice. Subsequent phases invoke the new control set (Limiting Conditions for Operation, Administrative Controls and Design Features) in logical groupings that ensure related controls are implemented in the same phase. DOE-RFFO requested and K-H agreed to the BIO becoming the AB of record for all Building 371/374 Complex activity by August 1, 1998; this date is the new targeted completion for IPP milestone 3-3. The BIO-IP is being revised in October to incorporate Revision 2 of the BIO and DOE-RFFO comments, including acceleration of implementation of selected Administrative Controls judged to afford substantial improvement over current controls.

Revision 2 of the Building 371/374 Complex BIO was completed and delivered to DOE-RFFO on September 10, 1997. This revision resolves the final comments from DOE-RFFO generated during preparation of their Review Report and incorporates corrections identified during finalization of the BIO-IP. Comments served to clarify the control set, consistent with the previously agreed intent, while most corrections ensured that the main body of the BIO was consistent with the control set. One substantive change added an LCO for the HVAC supply isolation valves to complement the credit taken for passive backdraft dampers. Given recent evidence of actual backdraft damper capability, alternative means of limiting potential HVAC supply leakage when exhaust fans are unavailable are

being assessed. The preferred concept involves new HEPA filtration in the inlet flow stream. When a concept is finalized, the BIO and BIO-IP will be updated.

The completed BIO fulfills most of the commitments made in the IPP to close the original sub-recommendations 2 and 6. Only if the decision is made to proceed with the safety margin upgrades will additional work be required to complete the Department's commitment regarding these sub-recommendations.

DOE-RFFO issued their Review Report for Revision 2 of the BIO on September 10, 1997. The Review Report summarizes the Department's bases for approval of the BIO. There are no directed changes since comments were resolved by Revision 2. Appendix B, however, highlights issues derived from BIO-identified risk-dominant scenarios and requires evaluation of potential measures to achieve further risk reduction prior to the next annual update. Included are: possible additional credit for an enhanced fire department response strategy, perhaps tied to credited riser flow alarms; evaluation of combustible scrubber tank removal; verification of HEPA filter bypass leakage surveillance sensitivity; enhancement of dock safety, such as by improving ventilation or segregating combustible materials; possible use of metal waste crates; further seismic upgrades; and verification of steps to ensure reliability of vents on the most hazardous drums.

2.1.2 Building 371 Priority Safety Upgrades

Substantial progress was made in completing the Building 371 priority safety upgrades specified in Table 3-1 of the IPP. Seven additional upgrades were completed so that eight of the fifteen are now in place. The completed upgrades include:

Filter Plenum Demister Analysis and Inspections -- a visual inspection of the demister screens in all fourteen plena in Building 371 was completed in April. Based on the inspections, the screens were replaced in plenum FP122 and the screen retaining clips were tightened in plenum FP141. The screens were shown to provide ember removal capability consistent with the requirements of DOE-STD-1066-97.

Combustible Loading Control Program -- a formal Combustible Loading Control Program based on a completed Fire Hazards Analysis (FHA) was established for the facility; the BIO-IP will adjust the control parameters as necessary for full compliance with BIO requirements and will ensure timely implementation.

Fire Doors -- fire doors in BIO-required fire barriers (both Design Features and defense-in-depth barriers) were repaired or replaced as necessary to comply with current requirements; thirteen doors were repaired and nine doors were replaced with over one hundred doors evaluated.

Subsurface Drain System -- two shallow wells were installed at the sub-basement level to provide alternate monitoring and pump-out capability; a weir was installed in each outflow to facilitate monitoring of the normal drain function and the existing cleanouts were extended and labelled for easy access. Procedures for routine monitoring and emergency operation were completed.

Egress Route Upgrades -- consensus egress routes were established

and path markers in the facility were modified or repaired accordingly; egress signs were added or modified, stairway gates were repaired or modified, and an unused guard post obstructing the main facility exit was removed.

Life Safety Code Exemption Request – one permanent and one temporary exemption request were developed, with appropriate compensatory measures, and approved to address egress features not in compliance with the Life Safety Code. The temporary exemption addresses new issues identified in the Fire Hazards Analysis; this exemption will be removed upon completion of corresponding new FY-98 projects.

Implement Stacker Retriever Load Limits – analyses were completed to identify locations that should be maintained empty to prevent overloading of the rack structure in an earthquake; a total of fifty-four locations were emptied and the stacker/retriever software was modified to prevent future use of the positions.

Progress on five of the remaining upgrades affords high confidence that they will be completed by December of 1997 per IPP Milestone 3-2. These upgrades include: Penetrations for Room 3206 Fire Wall; Seismic HVAC Upgrades; Basement Level Fire Walls; Seismic Bracing for Attic Water Pipes; and Relocate High Risk Residues in Room 3189.

Plenum Deluge System Modifications entail operational impacts due to the need to shutdown affected filter plenums for a portion of the work that appear likely to delay their completion beyond the December of 1997 target.

The last remaining upgrade, involving the HVAC isolation valves, will be closed on an equivalent basis for the exhaust ductwork but may extend into 1998 for the supply ductwork to achieve an appropriate systems engineering solution given recently obtained evidence of the actual capability of the installed backdraft dampers. A test was performed in late August in which all ventilation in Building 371 was secured for several hours (the first time ventilation had been interrupted since the facility initiated operation); no spread of contamination occurred. The test permitted an inspection of the supply backdraft dampers which concluded, contrary to pretest expectations, that they were not suitable for the safety function they had been credited with in the BIO. A new conceptual design is being developed to provide supply HEPA filtration that would obviate reliance on either the backdraft dampers or the supply isolation valves. The design will support a decision to establish a firm course of action.

Immediately upon completion of the K-H sponsored self-assessment of upgrade project activities as reported in the previous quarterly report, DOE-RFFO reconvened their original assessment team to appraise the effectiveness of corrective actions taken. The reassessment noted improvements in the conduct of the project in all areas and identified a few areas for continued improvement, principally involving work package completion and tracking for effective project management. K-H accepted these comments and provided responses. Specific concerns were also identified regarding large fires as analyzed in the BIO; these concerns were addressed in Revision 2 of the BIO and by including an upgrade project for FY-98 to prevent seismic overturning of flammable liquid cabinets.

Additional BIO-required upgrades have been identified and their completion in FY-98 and FY-99 is scheduled in the BIO-IP, completing IPP milestone 3-4. The upgrades and current schedule are presented in Table 2-1. The schedule will be managed with the BIO-IP.

2.2 Deliverables

IPP Milestone 3-2 Report completion of priority safety upgrades specified in Table 3-1 by the end of 1997.

Progress toward upgrade project completion in this quarter makes successful completion of this milestone achievable with the exception noted for the HVAC supply isolation valves and the plenum deluge system modifications. A firm schedule for implementation of the selected alternative for the isolation valve project and for completion of the plenum deluge system modifications will be provided in the next report.

IPP Milestone 3-3 Establish and document operation of Building 371 in conformance with an updated AB by December 1996.

This milestone is now scheduled for August 1, 1998, based on the approved Authorization Agreement of September 11, 1997. The BIO-IP provides a sound roadmap for timely completion.

IPP Milestone 3-4 Issue schedule (implementation plan) for further Building 371 upgrades identified during the initial AB development by November 1996.

The implementation schedule containing all BIO-driven additional upgrades was issued on August 25, 1997, and incorporated into the BIO-IP. This milestone is considered complete.

IPP Milestone 3-5 Report completion of other Building upgrades on the following Schedule:

The schedule for these upgrades is the IPP schedule unless and until DOE determines that sufficient assurance of an early off-site option for Site SNM exists to warrant deferral of the safety margin upgrades for one year.

IPP Milestone 3-6 Reassess the need to complete the other upgrades and inform the Board by September 1998 (Milestone 3-6).

The reassessment will be an ongoing effort as decisions on the disposition of Pu and oxides are reached. The need for these upgrades is dependent upon assurance of alternative offsite shipment or resumption of ISV design and construction. If either of these conditions is met, the upgrades will not be required. Additionally, the completed BIO and the committed BIO upgrades affect the need for and benefits of some of the safety margin upgrades. These impacts will be weighed in the committed reassessment should some upgrades go forward.

2.3 Schedule of Activities

2.3.1 Building 371 Authorization Basis

The BIO and BIO-IP are complete. The BIO-IP is being updated in October to incorporate Revision 2 of the BIO and DOE-RFFO comments on the BIO-IP.

2.3.2 Building 371 Priority Safety Upgrades

The schedule of key milestones for completion of the priority upgrades, including additional upgrades identified by the BIO and its Implementation Plan, includes:

- Eight of the fifteen priority safety upgrades (IPP Table 3-1) are completed as of September 30, 1997.
- All but two of the priority safety upgrades (IPP Table 3-1) will be completed by December 31, 1997.
- Firm schedules for the remaining two priority safety upgrades (IPP Table 3-1, HVAC Isolation Valves and Plenum deluge system Modifications) will be provided in the next quarterly report.
- The BIO-IP provides the schedule for additional upgrades to be completed in FY-98 and FY-99.

3.0 INTEGRATED Pu CONSOLIDATION AND MANAGEMENT

This section corresponds with section 4 of the IPP, and follows the sequence of the Programmatic Elements in that section. The IPP states that, "The insights gained on the overall Site risk from residues and the effects of the decision to proceed with the priority Building 371 upgrades and a new ISV are to be integrated with the actions committed to the Board under Recommendation 94-1 to ensure an integrated Site plan for safe Pu management and storage. System engineering principles will be used to develop a strategic plan for residue storage and shipment that incorporates timely consideration of contingencies, such as possible delays in Waste Isolation Pilot Plant (WIPP) opening."

3.1 Accomplishments and Status Summary

As reported in the second quarterly report, the evaluation of alternatives for achieving the IPP-required risk reduction for highly dispersible residues has been completed. Conclusions were issued and incorporated into the Site's 94-1 program plan. The Site Integrated Stabilization and Management Plan (SISMP), Version 7.0, dated July 15, 1997, incorporated the 94-3 residue management recommendations originally incorporated in Revision 6. Included were: pre-stabilization drum removals from Buildings 771 and 776/777 to Building 371; utilization of the pipe overpack container for the TRU waste from dispersible residues after processing; and storage of WIPP-ready waste packages in waste management facilities as necessary outside the Protected Area. Residue storage requirements and the available capacity will be updated as Site planning evolves to ensure residue risk reduction goals can be met.

3.2 Deliverables

IPP Milestone 4-2 Incorporate selected residue alternatives into existing Site programs by April 15, 1997.

Completion of Milestone 4-2 as of March 31, 1997, was reported in the second quarterly report. This milestone is closed.

IPP Milestone 4-3 Establish and document interim storage for the Site's Pu inventory, including residues, by the end of FY-02 in a configuration that reduces Site risk due to Pu (metal, oxides and residues) to a level that is a small fraction of the risk from current Pu holdup.

This milestone is on schedule.

3.3 Schedule of Activities

All current activities related to this task are governed by the SISMP and 94-1. There are no near-term milestones for the 94-3 program.

4.0 INTERIM STORAGE MISSION

This section corresponds with Section 5 of the IPP and addresses the following mission need: "provide safe and secure interim storage of the Site's plutonium metal and oxide inventory, including pits (if still onsite) and any oxide generated due to residue and solution stabilization activities. The interim storage mission is to begin upon completion of the May 2002 commitment for plutonium metal and oxide repackaging to DOE Standard 3013 and continue until the inventory is shipped offsite (goal is no later than 2015)." Chapter 5 focusses on plans to perform an environmental impact evaluation for an Interim Storage Vault, complete predecisional activities, and base any further action (such as ISV design, construction and operation) on the NEPA outcome.

4.1 Accomplishments and Status Summary

As reported in the second quarterly report, DOE issued the Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement on January 14, 1997. In this Storage and Disposition ROD, DOE concluded that Site SNM should be shipped to Pantex and Savannah River and thus not require interim storage at Rocky Flats. The DOE elected to make early offsite shipment the preferred option for the ten-year planning that will integrate programs throughout the DOE complex. The DOE also suspended preparation of an Environmental Impact Statement for the ISV (while keeping the option open to recommit to the effort if necessary) and took other actions to prepare for early shipment of Site SNM to Pantex and Savannah River Site (SRS). Work on an ISV for Rocky Flats will not proceed beyond the conceptual design that is nearing completion.

The Conceptual Design Report (CDR) was completed and transmitted to RFFO in July as reported in the last quarterly report.

4.2 Deliverables

Specific deliverables specified by the IPP and the status of each, as related to the ISV are presented below.

IPP Milestone 5-1 Complete NEPA evaluation of alternatives for interim storage by May 1997.

> The DOE has terminated efforts to pursue the ISV NEPA evaluation in view of the Record of Decision from the Programmatic Environmental Impact Statement.

IPP Milestone 5-2 Provide ISV design documents, including design criteria, as they are developed and no later than prior to the start of detailed design, including: functional design requirements; and predecisional design reports and drawings. Provide detailed design plans, calculations, drawings and specifications when developed if a decision is made to proceed.

> The completed ISV Conceptual Design Report (CDR) is being provided to the DNFSB by the Department.

4.3 Schedule of Activities

The ISV conceptual design is complete.

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

Building 371/374 Complex Authorization Agreement

Authorization Agreement No. RFETS-005

Preamble

The purpose of this Authorization Agreement is to adopt the Building 371/374 Complex Authorization Basis, hereinafter referred to as the AB, and to authorize the performance of activities in the Complex which are enveloped by the analysis in the AB.

On July 1, 1995 Kaiser-Hill Company L.L.C. (Kaiser-Hill) became the integrating management contractor replacing EG&G Rocky Flats, Inc. It is recognized by Kaiser-Hill and DOE-RFFO that (a) Building 371/374 Complex facilities were over 20 years old and had system deficiencies from its original intended design capability, (b) there was incomplete knowledge and limited reliable/retrievable data regarding its systems and components, (c) some Complex systems and components required priority upgrades to perform the interim storage mission in accordance with the Implementation Program Plan for DNFSB Recommendation 94-3, (d) the planned Complex mission differs from its original design purpose, and (e) additional upgrades were expected to result from the preparation of a new authorization basis document. Based upon these conditions a new authorization basis document, the Building 371/374 Complex Basis for Interim Operation (BIO), was developed using DOE Standard 3011, *Guidance for the Preparation of DOE 5480.22 (TSR) and DOE 5480.23 (SAR) Implementation Plans and* DOE Standard 3009, *Preparation Guide for the U. S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports*, and is the focus of this agreement.

Agreement

With respect to Building 371/374 Complex, the Department of Energy, Rocky Flats Field Office and Kaiser-Hill agree as follows:

A. All BIO activities and operations conducted in the Complex will be accomplished in accordance with the applicable control set requirements established in the AB. These control set requirements have been demonstrated to be adequate to perform the general and current operations enveloped by the analysis in the AB. During the course of BIO implementation, any additional controls and technical safety requirements (TSRs) that may be needed to safely perform planned activities will be developed and evaluated in accordance with the Activity Control and Nuclear Safety programs described in the AB.

B. The AB contains a graded set of requirements consistent with the requirements in DOE Order 5480.23. The requirements are suitable for implementing Integrated Safety Management for the 371/374 Complex and its planned mission, including storage of special nuclear material until 2002. System Evaluation Reports support the BIO and document the means of assuring compliance with the functional requirements of Complex safety systems, structures, and components. Adherence to these requirements is required by the TSRs. Information copies of changes to the Building 371/374 Complex System Evaluation Report, Section 4.0, 5.0, and 8.0 shall be provided to DOE, RFFO.

C. Applicable federal and state law, including implementing regulations, and all contractual requirements regarding the Building 371/374 Complex remain in force. The safety management controls in Site Program Plans as referenced in Chapter 3 of the BIO, will enhance the ability of Kaiser-Hill to meet the safety management requirements contained in the Orders and Directives listed in Section J, Attachment F, of contract #DE-AC34-95RF00825.

D. The Building 371/374 Complex BIO supersedes previous authorization basis documents for the Complex. Existing Unreviewed Safety Question Determinations (USQDs) were reviewed to determine the valid compensatory measures which must be in place to meet the requirements of the proposed control set and incorporated. Open USQDs and those which may be generated during implementation of the BIO will be addressed in updates to the AB, as necessary.

E. Building 371/374 Complex TSRs and controls will be kept current by Kaiser-Hill including the performance of an annual review. The Kaiser-Hill evaluation processes (e.g., the USQDs and USQ screens) shall be used to add new activities or to make changes to existing activities identified in the AB.

F. Controls in the AB will be implemented in a phased manner as described in the BIO Implementation Plan (IP). An information copy of any changes to the BIO IP shall be provided to DOE, RFFO. The AB for BIO activities will be unambiguous at any stage during the phased implementation. For each phase, a readiness determination will be performed in accordance with established Site protocol which implements DOE Order 425.1, *Startup and Restart of Nuclear Facilities*. As of August 1, 1998, the BIO will be the AB of record for all activities conducted in the Building 371/374 Complex.

G. The Department of Energy, Rocky Flats Field Office and Kaiser-Hill conclude that the Building 371/374 Complex BIO adequately documents the operating safety basis and contains controls (TSRs), that when fully implemented, will provide reasonable assurance that the work activities described in the AB can be conducted without endangering the environment or the health and safety of the workers or public. The BIO Review Report developed by the RFFO BIO Review Team using DOE-STD-1104, *Review and Approval of Final Safety Analysis Reports*, documents the technical bases for RFFO approval of the BIO and TSRs.

H. The Building 371 Safeguards and Security Plan provides specific direction for related activities and operations in Building 371.

I. This Authorization Agreement is effective for implementation as of the date of the last signature below and shall remain in effect through the life of contract #DE-AC34-95RF00825, unless extended in writing by both parties.

For Kaiser-Hill Company L. L. C.
Rocky Flats Environmental Technology Site

Robert E. Tiller 9/8/97
Robert G. Card for Date
President

For the Department of Energy
Rocky Flats Field Office

Jessie M. Roberson 9/16/97 Date
Manager

TABLE 2-1: BIO-DRIVEN UPGRADES AND SCHEDULE

	UPGRADE ITEM	SCOPE	COMPLETION SCHEDULE
1	Install Emergency Lights	Provide seismically qualified egress emergency lighting (SC-3 function in Administrative Control [AC] 5.9)	JUN 98
2	Evaluate/Reinforce HVAC Ducting	Ensure ducts credited for tertiary confinement have adequate pressure capacity for tornado atmospheric pressure transient or abnormal ventilation lineups	NOV 98
3	Ensure Lightning Protection	Ensure that security systems to prevent helicopter intrusion do not compromise lightning protection for Building 371	DEC 97
4	Inspect/Repair SC-3 Fire Barriers	Apply lessons learned from Room 3206 evaluation as necessary to ensure one-hour capability of fire barriers that are SC-3 in AC 5.9	JUN 98
5	SNM Storage Rack Repairs	Ensure adequate seismic capacity for storage racks used in vault-type material storage rooms (SC-1/2 SNM Storage Racks in AC 5.9)	NOV 98
6	HVAC Interlock Modifications	Ensure safe failure mode (credited as Passive Design Feature in BIO) in EBE for the supply fan trip function and upgrade interlock to trip return fans as well as supply	SEP 98
7	Extend Roof Drains	Improve runoff during extreme weather conditions	APR 99
8	N_2 Failure Prevention Mods	Ensure nitrogen shutoff credited as Passive Design Feature in BIO to prevent Central Storage Vault pressurization after earthquake	FEB 99
9	Counterfeit Bolt Inspection	Review usage of counterfeit bolts and replace any whose capacity will not meet BIO requirements for SC-1/2 systems (94-3 low cost issue)	FEB 98
10	Redundant Zone 3 HVAC Controllers	Provide redundant ΔP controllers in Zone 3/Zone 4 areas for reliable implementation of LCO 3.1, item 6	OCT 98
11	Drain Chemical Storage Tanks	Reduce inventories of KOH and HNO_3 in outdoor storage tanks to meet requirements of AC 5.2.2, items e and f	DEC 97

	UPGRADE ITEM	SCOPE	COMPLETION SCHEDULE
12	Upgrade Vault Penetrations for Fire where Practical	Upgrade central storage vault boundaries to SC-1/2 (2-hour) fire barrier requirements where practical (BIO-IP will otherwise ensure that appropriate combustible control limits are established per AC 5.4.2, item 4c)	JUN 98
13	Repair Attic Beam	Compensate for omitted negative reinforcement at the junction of beams B55 and B56	MAR 98
14	Install Attic Leak Detection	Provide capability to detect and alarm if significant attic flooding occurs	DEC 97
15	Resolve HVAC Supply Isolation Capability	Complete evaluation of HEPA filtration option and implement HEPA filtration or alternative using isolation valve	TBD[1]
16	Miscellaneous BIO Upgrades	a) Install Dock 18T Roll-up Door Interlock b) Verify Seismic Capacity of SC-1/2 HVAC ΔP Sensor Lines c) Provide Lab Propane Tank Seismic Supports d) Complete Any Additional SQUG Walkdowns e) Determine HVAC Scrubber Disposition f) Provide Seismic Restraint for Flammable Liquid Cabinets	DEC 98
17	Life safety Code Upgrades	Correct Deficiencies in B371 (Material Access Area) per Updated Facility Fire Hazards Analysis	NOV 98

[1] A firm schedule will be established when the evaluation is completed and the alternative is selected; the objective will be to finish as close to the original December 1997 schedule for the IPP Priority Upgrade isolation valve project as possible while ensuring that the upgrade implemented is technically sound and more effective than the original isolation valve concept

Enclosure 3

(Conceptual Design)

(not included in office pkg)