

APPENDIX A

Environmental Management Plan

Significant environmental aspect	Objective	Target	Status
EMP 1 Ecological Resource Disturbance	By 1/1/06, establish a Laboratory policy prohibiting the introduction of exotic species within the boundaries of LLNL.	(a) Modify the <i>ES&H Manual</i> to specify that exotic species introductions contradict the LLNL environmental policy.	Completed. (a) Issued major revision to <i>ES&H Manual</i> , Document 33.2, 9/27/05.
		(b) Include wording specific to LLNL employee responsibilities to uphold the environmental policy regarding species introductions.	(b) Issued major revision to <i>ES&H Manual</i> , Document 33.2, 9/27/05.
		(c) Post signs at the Livermore site and Site 300 alerting LLNL staff of exotic species introduction and legalities associated with introductions.	(c) Installed signs at the Livermore site, completed 2/06. No signage currently needed at Site 300.
	Educate LLNL employees annually about the ecological and economical consequences of exotic species introductions.	Promote employee awareness about exotic species (e.g., write articles for <i>LLNL Newslines</i>).	Ongoing.
	Control feral pig populations at Site 300, ongoing as need determined.	Control efforts occurring as needed, pre- and post-disturbance wetland monitoring.	Ongoing.
	Complete rotenone treatment of the Lake Haussmann (formerly known as the Drainage Retention Basin) late September 2006.	Complete rotenone treatment 2005–2006.	Completed 10/6/06.
EMP 2 Electrical Energy Use	Meet the objectives provided in Department of Energy (DOE) Order 430.2A, Departmental Energy and Utilities Management, Attachment 1, Contractor Requirements Document. <i>Note:</i> Goals have changed with enactment of the Energy Policy Act of 2005.	Reduce greenhouse gas emissions by 30% by 2010 based on 1990 emissions.	In progress. 24.7% reduction achieved at end of FY 2006 from the fiscal year (FY) 1990 baseline (Executive Order 13123 goal). 3.17% reduction achieved at end of FY 2006 from the FY 2003 baseline (Energy Policy Act of 2005 goal).
		Reduce energy consumption in laboratory and industrial facilities, based on 1990 levels: 20% by 2005 and 25% by 2010.	In progress. 21.5% reduction achieved at end of FY 2006 from the FY 1990 baseline (Executive Order 13123 goals). 2.27% reduction achieved at end of FY 2006 from the FY 2003 baseline (meets Energy Policy Act of 2005 goal).

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		Accomplish 80% of identified life-cycle cost effective (LCCE) water conservation actions by 2010.	In progress. Initial Energy Savings Performance Contract (ESPC) project proposal (10/06) included an irrigation control measure that was not LCCE. Submitted a small project, approximately \$160,000, for institutional funding to install dual-volume flushometers on women's toilets.
		Implement President's Initiative for Hurricane Relief (9/05): 10% reduction in electricity and petroleum fuel use per FY 2004 baseline.	Completed. Completed performance reporting to NNSA/LSO in FY 2006.
EMP 3 Fossil Fuel Consumption/ Renewable Energy Use	Meet the DOE vehicle fleet efficiency goal, as stated in I.106 DEAR 970.5223-5.	Reduce petroleum consumption by 20% by 2008 compared to 1999 baseline.	In progress. Reduced fossil fuel consumption on light-, medium-, and heavy-duty vehicles by 16% (comparing the FY 2006 consumption to the 1999 baseline)
		Of the annual replacements of light-duty vehicles, replace 75% with alternative fuel vehicles (AFVs).	Ongoing. For the FY 2007 vehicle exchange, LLNL requested 65% of its fleet to be AFVs. Many light-duty vehicles are not readily available as AFVs. LLNL will continue replacing every vehicle with AFVs depending on availability.
		Increase usage rate of alternative fuel in alternative fuel capable vehicles (80% use vs. total availability by 2008).	In progress. An E85 station is planned for early 2007, which will service approximately 90% of the E85 fleet.
EMP 4 Hazardous Materials Use	By 3/31/06, identify the hazardous materials used at LLNL by conducting a study to identify the database(s) or other information sources that provide a comprehensive list of hazardous materials.	(a) Identify hazardous materials used at LLNL. (b) Complete evaluation of hazardous materials databases and other information sources.	Completed. Submitted the draft decision process document to NNSA/LSO on 10/20/06. The final draft decision process to complete targets (a) and (b) to be submitted to the LLNL EMS Coordinator by 6/15/07.
		By 9/15/06, write a decision process to document how the hazardous materials are selected and the rationale for selection.	Complete decision process on selection of hazardous materials.

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	By 9/15/06, complete hazardous materials identification evaluation.	Complete hazardous materials list.	Completed. See above.
	By 9/31/07, evaluate each selected hazardous material to determine whether substitution, reduction, reuse or a change in the process would decrease usage, waste generation, or other ES&H concerns. Each hazardous material evaluation will follow the Pollution Prevention Opportunity Assessment (PPOA) process.	Complete the PPOA.	In progress. After the final decision process is approved, the Environmental Protection Department P2 Team will evaluate the hazardous materials to determine the feasibility of conducting PPOAs. The P2 Team will complete PPOAs on selected hazardous materials during FY 2008.
EMP 5 Mixed Waste Generation	Reduce the amount of mixed and California combined solid waste generated from routine LLNL programmatic operations when economically and technologically feasible.	Reduce the amount of routine mixed and California combined solid waste generated by programmatic activities by 20% by 2007, using the 2004 pollution prevention report as a baseline. The FY 2004 generation baseline is 41,458 pounds.	In progress. Due to changes in the management of on-site analytical services, the largest single generator of mixed waste is no longer in operation. RHWM believes that when final closure activities are completed, the mixed waste generation rate will be significantly reduced. <i>RHWM completed Review of LLNL Mixed Waste Streams for the Application of Potential Waste Reduction Controls in 1/07.</i>
		As an additional metric, evaluate waste streams in terms of cost per unit volume; target high-cost waste streams for reduction.	In progress. See above.
EMP 6 Municipal Waste Generation	Maintain compliance with applicable regulatory requirements.	Review federal, state, county and municipal laws, measures, codes, and incentives annually to verify compliance. No violations of regulatory requirements.	Ongoing. Review conducted annually.
	Prevent/minimize and increase reuse and recycling of waste generated at facilities throughout their life cycles.	Modify Plant Engineering master Design Criteria Document to include design elements from the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System.	Completed 5/06.
	Minimize and increase reuse and recycling of routine nonhazardous waste generated during decommissioning, deactivation, decontamination, and deconstruction or demolition of facilities.	Perform Laboratory-wide assessment to revisit/identify all significant routine and non-routine nonhazardous waste.	In progress. A similar objective/target is being tracked in EMP 7, Nonhazardous Material Use. LLNL plans to merge EMPs 6 and 7 in 2007.

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	Prevent/reduce generation and increase reuse and recycling of routine nonhazardous waste in the office and workplace.	Perform Laboratory-wide assessment to revisit/identify all significant routine and nonroutine nonhazardous waste.	In progress. See above.
	Improve effectiveness and efficiency of waste management, reuse, and recycling programs.	Perform Laboratory-wide assessment to revisit/identify all significant routine and nonroutine nonhazardous waste.	In progress. See above.
EMP 7 Nonhazardous Materials Use	Incorporate affirmative procurement site-wide.	Incorporate EPA's Comprehensive Procurement Guidelines into procedures for technical release representatives (TRRs).	Completed. Standard Practice 23.5, modifications to TRR manual and issuance of General Provisions for subcontracts revised by 2/07.
		Incorporate DOE's directive for environmentally preferable purchasing into procurement procedures.	Completed. See above.
	Make it possible to increase site-wide use of products with recycled content with procedures and training.	By Q2 of FY 2007, formalize LLNL Procurement Standard Practices, Section 23.5, to incorporate DOE's Affirmative Procurement Program for recycled content and biobased products.	Completed. See above.
		By Q3 of FY 2007, document available data on post-consumer content of purchased materials (e.g., office supplies).	In progress. To be completed during gathering of information for reporting in Q1 of FY 2008.
	Offer product that will reduce use of office paper.	By Q3 of FY 2007, establish printers and copiers with duplexing (i.e., two-sided) capability as preferred purchasing choice.	Completed. EPA Energy Star requirement added to Section 23.5 of the <i>Laboratory Procurement Standard Practices</i> and <i>TRR Policy Manual</i> in 02/07.
		By Q3 of FY 2007, establish duplexing for printers and copiers as default setting.	Completed. See above.
	Implement Energy Star requirements for energy consuming equipment	Implement purchase requirements in <i>TRR Policy Manual</i> .	Completed 8/26/06.
		By Q3 of FY 2007, implement requirement in Procurement Guidance and terms and conditions.	Completed. Section 23.5 of the <i>Laboratory Procurement Standard Practices</i> , modification of <i>TRR Policy Manual</i> and general provisions for subcontracts completed in 2/07.

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		By Q3 of FY 2007, formalize the promotion of environmentally preferable electronic equipment by including this issue in employee awareness programs.	In progress. To be completed Q1 of FY 2008.
		By Q3 of FY 2007, formalize the promotion of environmentally preferable electronic equipment by including this issue in TRR training.	Completed. Section 23.5 of the <i>Laboratory Procurement Standard Practices</i> , modification of <i>TRR Policy Manual</i> and general provisions for subcontracts completed in 2/07.
	Improve affirmative procurement awareness and training for LLNL TRRs and Procurement Representatives.	Train all TRRs in FY 2006.	Completed.
		At least bi-annual communications to the TRRs.	Ongoing. P2 team provides bi-annual training to TRRs.
		By Q3 of FY 2007, train Procurement Representatives on Section 23.5 of the <i>Laboratory Procurement Standard Practices</i> after the section has been approved and implemented.	In progress. To be completed Q1 of FY 2008.
EMP 8: Radioactive Materials Use	Identify and reduce radioactive materials impacts at LLNL by an amount to be determined by this study	Conduct a study to determine the potential for reduction of the impacts of radioactive materials use. The study will be completed by 11/30/06.	Completed.
		Based on the potential for reductions, recommend an amount of impacts to be reduced as appropriate.	In progress. Defense and Nuclear Technologies, with assistance by EPD, will determine which reductions in usage, if any, are appropriate for programmatic operations.
EMP 9: Transuranic Waste Generation	Review the characterization of transuranic (TRU) waste to ensure generation of nonconforming waste is minimized and characterization is accurate to maximize the ability to disposition the waste.	By 6/30/06, review the Nonconformance and Corrective Action Reports (NCARs) developed during the Waste Isolation Pilot Plant (WIPP) characterization and certification project and make recommendations to the characterization and packaging of TRU waste.	Completed. Conducted and documented a series of meetings with representatives from LLNL programs, RHWM, WIPP to discuss the types of failures that were noted during the WIPP campaign and to discuss strategies for ensuring that the problems do not recur.
		BY 12/31/06, develop procedure(s) that implements the recommendations from the study.	Completed 12/7/06. Developed and approved a TRU packaging procedure that identified several new controls to respond to the NCARs written as a result of the WIPP characterization, certification, and shipping project.