

**Balancing Institutional Controls and Beneficial Reuse at U.S. Department of Energy  
Office of Legacy Management Sites - 11133**

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**ABSTRACT**

The U.S. Department of Energy (DOE) Office of Legacy Management (LM) manages DOE's post-closure responsibilities at 87 sites in 27 states and Puerto Rico to ensure future protection of human health and the environment. LM is responsible for long-term monitoring of residual contamination and ensuring post-closure standards are maintained at many of the sites. An integral part of this responsibility is monitoring institutional controls (ICs) that are developed to ensure that the land and resources, such as groundwater, are not utilized in ways that would allow exposure pathways to contamination remaining at the site. Many of these restrictions are established at the time of site closure and are part of the remedy and regulatory documents or are implemented due to continued monitoring and site characterization. These restrictions and ICs are documented in site-specific Long-Term Surveillance and Monitoring Plans, deed restrictions, or other administrative controls at LM sites.

In 2004, LM established goals to review land holdings and identify locations that have the potential for beneficial reuse. The intent was to reduce the federal footprint and to promote beneficial reuse on federal lands, while abiding by the specific ICs of the individual sites. Beneficial reuse includes a range of options such as completing site transfer to third parties, partnering with industry for renewable energy, or utilizing the land for agricultural, conservation, or recreational purposes. To meet these goals, LM has successfully conducted five property transitions, has photovoltaic (PV) solar projects in progress, and is actively pursuing other reuse opportunities that are consistent with local zoning. Enforceable, visible, and durable ICs are developed to ensure that any current and future site activities, such as beneficial reuse, are designed to be consistent with the primary goal and any regulatory requirements of protecting human health and the environment.

**INTRODUCTION**

The U.S. Department of Energy (DOE) has managed long-term surveillance and maintenance activities at DOE sites since 1988. DOE's Office of Legacy Management (LM) was established in December 2003, and its specific mission is to manage DOE's post-closure responsibilities and to ensure the future protection of human health and the environment. LM has control and custody of legacy land, structures, and facilities and is responsible for maintaining them at levels suitable for long-term use. Given the long-lived nature of radionuclides, long-term surveillance, monitoring, and maintenance at some sites will be required for hundreds or even thousands of years.

During World War II and the Cold War, the Federal Government developed and operated a vast network of industrial facilities for research, production, and testing of nuclear weapons, as well as other scientific and engineering research. These processes left a legacy of radioactive and chemical waste, environmental contamination, and hazardous facilities and materials. LM is responsible for Departmental sites that have no continuing mission and have been cleaned up. In addition to these sites, LM is responsible for sites under the Formerly Utilized Sites Remediation Action Program (FUSRAP). Currently, the U.S. Army Corps of Engineers (USACE) is responsible for site surveys and remediation of FUSRAP sites. Once remediation is completed LM then becomes responsible for long-term surveillance and maintenance.

LM also assumes responsibility of uranium-processing sites addressed by the Uranium Mill Tailings Radiation Control Act (UMTRCA). UMTRCA Title II sites are sites that were commercially owned and regulated under U.S. Nuclear Regulatory Commission (NRC) license. For license termination the owner must conduct an NRC-approved remediation and reclamation of any on-site radioactive waste remaining from former uranium ore-processing operations. The site owner also must ensure full funding for inspections and, if necessary, ongoing maintenance. Once site reclamations are complete, the former NRC license is terminated and LM then accepts title to these sites for custody and long-term surveillance and maintenance. Additionally, LM has responsibility for DOE Defense Decontamination and Decommissioning (D&D) Program sites and the “Nevada Offsites,” where underground nuclear tests and experiments were performed outside the Nevada Tests Site.

During the cleanup phase and as part of the remedy, DOE follows Policy 454.1, *Use of Institutional Controls*, which states that it is “DOE’s policy to use institutional controls as essential components of defense-in-depth strategy that uses multiple, relatively independent layers of safety to protect human health and the environment...” DOE guidance document *Institutional Controls Implementation Guide for Use with DOE P 454.1, Use of Institutional Controls* gives examples of activities required for sound long-term stewardship including, but not limited to, “...all engineered and institutional controls (ICs) designed to contain or to prevent exposure to residual contamination and waste, such as surveillance activities, record-keeping activities, inspections, groundwater monitoring, maintenance of other barriers and contained structures, access control, and posting signs.” In current DOE policy, the term “stewardship” has been superseded by the term “surveillance and maintenance.” The development and management of ICs has been and continues to be a critical element of LM surveillance and maintenance activities.

As the fourth largest federal land-holding agency, DOE has now established goals for putting as much property as possible into beneficial reuse. Other DOE offices transfer those sites that have no continuing mission, but have residual contamination, to LM for long-term surveillance and maintenance. Were it not for the contamination, the lands would be freely released for unrestricted use consistent with local zoning and would be dispositioned to other federal agencies, state and local governments, or third parties. Because most of the sites in LM have some type of residual contamination, LM’s challenge for reuse is to identify the potential land uses that would benefit others, and to identify uses that are compatible with site ICs to maintain protectiveness.

## BACKGROUND

As of fiscal year 2010, LM has long-term surveillance and maintenance responsibilities at 87 sites in 27 states and Puerto Rico (Fig. 1). These sites together encompass approximately 13,000 acres of land within federal ownership under DOE jurisdiction and about 11,000 additional acres where DOE has lesser real estate interests and responsibility for long-term surveillance and maintenance actions such as monitoring and maintaining ICs. Sites are added to the LM inventory every year, with a total of 120 sites expected to be under LM management by fiscal year 2015. LM classifies its sites on the basis of the long-term surveillance and maintenance required, from Category 1 (sites for which LM simply maintains the records of former site activities), to Category 2 (sites where LM must continue to monitor waste disposal cells and contaminated groundwater), to Category 3 (sites where LM must continue some form of active remediation, such as groundwater treatment). LM's focus for ICs is on the Category 2 and 3 sites where there is residual contamination and active monitoring and protective measures.

The Atomic Energy Act (AEA) provides the regulatory framework that covers LM's sites and NRC's involvement. In addition, LM sites may be regulated by numerous federal cleanup regulations such as the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Resource Conservation and Recovery Act (RCRA); UMTRCA; FUSRAP; and the Nuclear Waste Policy Act (NWPA). Many sites are also subject to associated state regulations.

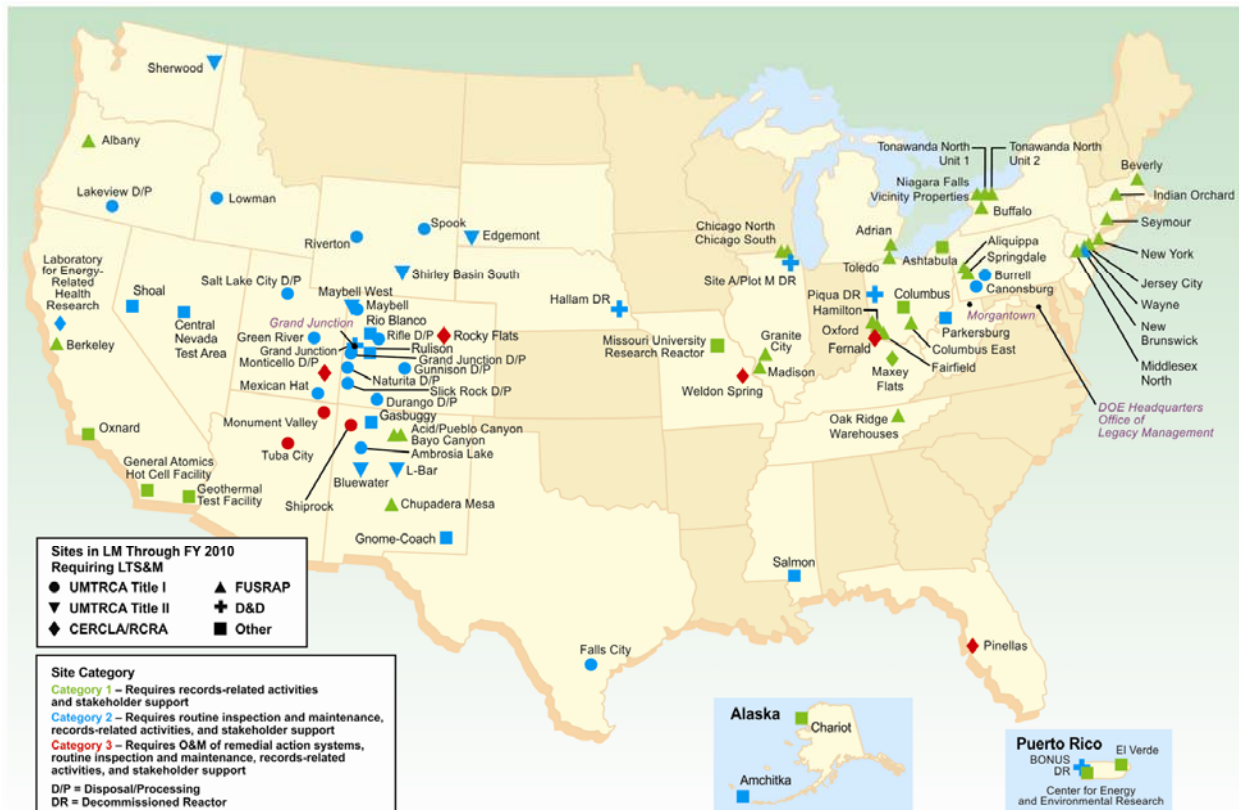


Fig. 1. Current LM sites and offices.

In 2003, LM established a comprehensive set of five strategic goals. The foundation of LM's Goal 4, "Manage legacy land and assets, emphasizing protective real and personal property reuse and disposition," calls for establishing environmentally sound and protective land uses on LM sites. LM believes there can be beneficial uses of land even though regulatory or other land use restrictions on the land are needed. As part of Goal 4, LM will make its lands available for government, public, and private use provided such use maintains cleanup efforts and is consistent with the site remedies, the tenets of sustainability, and the best practices of resource management. As the holding agency for large tracts of DOE legacy lands, LM is proactively searching for opportunities for all appropriate reuse of its lands.

## **ESTABLISHING ICs**

At sites where disposal cell integrity must be maintained in perpetuity and at other sites where acceptable levels of residual contamination are allowed by regulators to remain in place, DOE has a long history of establishing the ICs to ensure protectiveness of human health and the environment.

In 2003, DOE initiated Policy 454.1, *Use of Institutional Controls*, which provides information on how ICs should be planned, negotiated, implemented, and monitored. The term "institutional control" has diverse, and often inconsistent, meanings, depending on the driver for the controls. ICs may include administrative or legal controls, physical barriers or markers, and methods to preserve information and data and inform current and future generations of hazards and risks. It is DOE policy to emphasize that (1) diverse uses, requirements, and definitions of ICs exist, (2) ICs may overlap and differ, and (3) ICs need to be integrated effectively on a site-wide basis. LM uses Policy 454.1 to ensure proper management of resources, facilities, and properties to implement its programmatic responsibilities. Prior to establishing this policy and as early as 1988 under the Long-Term Surveillance and Monitoring (LTSM) Program, DOE collaborated with regulators, state and local governments, and local communities to develop mechanisms to restrict access to sites and contaminated media where needed. Under that program, most of the sites were regulated by UMTRCA. The sites had uranium mill tailings disposal cells, or DOE maintained responsibility for soil and groundwater contamination at former uranium-processing sites that DOE did not own, but where the contamination could be problematic if land use was not restricted.

The main objectives of DOE's policy and associated guidance are to affirm DOE's commitment to protect human health and the environment; establish a consistent approach to all phases of ICs as a component of DOE's mission and operations; integrate the use of well-designed, effective, and reliable ICs with other tools to manage, monitor, and transfer real and personal property under DOE control; and maintain the ICs as long as necessary to perform their intended protective purposes. All these objectives are critical to the implementation and success of ICs being established and tracked by LM.

The policy conveys the strategy of using a defense-in-depth strategy for ICs to provide a reasonable expectation that if one control temporarily fails, other controls will remain in place or actions will be taken to mitigate the potential consequences of a temporary failure. Defense-in-

depth uses multiple layers of protection to ensure that safety is not dependent solely on any single element of design, construction, maintenance, or operation. This strategy also ensures that those most likely to encounter the contamination are aware that the contamination exists and what they should do if they encounter contamination during the course of business.

DOE's policy is definitive in requiring restrictive ICs to be enforceable, visible, and durable. Visible means that all those who use or could potentially use the land know of contamination and the associated restrictions. Durable means that the restrictions will exist until the contaminant concentrations decrease to levels that allow for unrestricted use. The policy was written to be flexible enough to encompass the broadest application of ICs and can easily include the regulatory requirements incumbent under individual statutes. The ability to tailor each site's ICs is useful to LM because of the wide range of regulatory agencies that provide oversight and the vast number of stakeholders potentially impacted by any required ICs. For example, the U.S. Environmental Protection Agency (EPA) is the regulator for several LM sites. The names that EPA assigns for enforceable ICs may appear in the Records of Decision as "Proprietary ICs," whereas DOE's term for the same instrument is "Administrative ICs." The difference in terminology is not important as long as the restriction meets the criteria of enforceability, visibility, and durability. LM's focus continues to be developing appropriate controls, ensuring that the ICs are known to those who need to know, and providing for enforcement mechanisms in the event of a violation.

Finally, all ICs set the framework for all LM workers and their actions for monitoring and surveillance activities, characterization actions on sites, and the subsequent job safety analyses that LM uses to ensure its workers are also protected on LM sites. Continuity from the DOE entity, FUSRAP, or former NRC licensee, and the LM workforce and its activities is based on the regulatory and remediation documentation that embodies the ICs of a particular site. During site transition from one entity to another, in the case of any transfers out of federal ownership, or transfers to another federal entity such as the U.S. Fish & Wildlife Service, ICs carry the protective measures through the chain of title as appropriate and to ensure durability and consistency.

## **EVALUATING AND MAINTAINING ICs**

LM has three groups of sites where ICs must be, are being, or have been evaluated for appropriateness and completeness. The first group includes those sites in the LM inventory from the beginning of LTSM programs in DOE. These are remnant sites from UMTRCA, FUSRAP, and other programs. The second group is sites being transferred into LM from other DOE programs within DOE (e.g., the Office of Environmental Management's transfer of the Rocky Flats, Colorado; the Nevada Offsites; and Fernald, Ohio sites). The third group of sites is those sites that LM has identified for potential transfer to governmental agencies or private entities. These are sites that can clearly serve a beneficial reuse if, and only if, the appropriate restrictions can be applied and maintained as long as required. LM has also become responsible for the Yucca Mountain Project in Nevada and the operation of a national storage facility for elemental mercury (site yet to be determined), in addition to unexpected FUSRAP sites not in Appendix B of the USACE-DOE-Memorandum of Understanding and UMTRCA Title II sites acquired after December 18, 2003, which require ICs.

Most sites are transferred into LM with the ICs already in place as part of the remedy applied during the cleanup phase. Establishing a site's ICs could have occurred in the 1980s or early 1990s. Each site under LM is periodically assessed for risk, including types of contaminants, potential pathways for exposure, current and likely future land uses within the existing regulatory constraints, and public awareness of the restrictions. Technical staff develops any additional restrictions on the basis of the assessed risk, ensures regulatory agreement of the new IC, and engages real property staff to develop the appropriate instruments to ensure protectiveness. The instruments developed will include not only the required restrictions, but also appropriate access for LM to monitor the protected resources and the restrictions in outyears. Because there is remaining contamination, regulators must approve the new ICs and plans for monitoring and maintenance. For a majority of LM sites, a LTSM Plan specifies the ICs and documents how the sites will be maintained and monitored. Once the remediation plans, including the ICs, are approved, LM begins the cycle of routine monitoring to ensure there are no violations of the ICs.

Maintaining ICs for LM sites, including sites with beneficial reuse, occurs through several different methodologies. All LM-owned sites undergo an annual inspection to confirm the integrity of site features such as fencing, signage, and the disposal cell and associated structures. During the inspection, LM checks the on-site ICs and conducts a review of any off-site ICs. This helps ensure the visibility of required restrictions. Should any violations of the ICs occur, LM will notify the violating entity, the regulators, and those charged with enforcing the restrictions.

Violations have the most potential at third-party-owned sites that have undergone remediation. At these sites, LM has responsibility for the residual contamination, but because the land is owned by others, LM must exercise additional care regarding future development. These sites are typically UMTRCA sites secured for cleanup and then transferred to a local government agency such as a city or county government, FUSRAP sites not in federal ownership, and other sites where LM has long-term surveillance and maintenance responsibilities on non-federal land such as a state university or where an entombed reactor exists. While the restrictions are clearly stated in the deed of transfer, or other site-specific documentation, that document is normally in the administrative files, and the branch of government that manages the land may not know of the restrictions. This has resulted in violations where, for example, a Parks and Recreation Department plans to develop land with residual contamination without knowledge of the requirement to secure DOE approval for any plans on the land. Where this has occurred, LM has been consulted and the proposed plans have been approved. LM continues to work on means to raise the awareness of these sites, coordinate with state and local governments and improve communication to ensure ICs are known and effective.

## **BENEFICIAL REUSE**

It is LM's mission to establish environmentally sound and protective land reuses on LM sites. To accomplish this, LM implements DOE land use planning processes, taking into account economic, ecological, social, and cultural factors surrounding each site or parcel of land. LM will also make excess lands and facilities available for government, public, and private use consistent with the tenets of sustainability and best practices for land and heritage (e.g., ecological, cultural, and historical) resource management. Real property issues must be addressed throughout the

reuse process, making them an integral component of land use. *This is the biggest challenge for LM and the primary focus of this paper. The challenge is how to promote and entice beneficial reuse opportunities on underutilized federal land with mission requirements and land use constraints (ICs) that could exist for hundreds or thousands of years, and ensure these constraints continue to be effective and that the beneficial reuse opportunity is cost effective and compatible.*

Real property reuse within LM is organized into the following categories: property disposition, renewable energy, conservation, agriculture, community, and commercial/industrial. These categories represent potential LM reuse possibilities and existing programs across many agencies. Regardless of the property reuse selected, all reuse opportunities will be specifically evaluated to ensure that human health and the environment continue to be protected and that all reuse opportunities are in compliance with ICs identified for a specific land parcel.

Beneficial reuse can occur on DOE-owned lands, lands over which DOE has jurisdiction, and lands where DOE has no ownership interest, but for which DOE has responsibility for residual contamination. For the DOE-owned sites, DOE is able to control projects to preserve the remedy and the associated ICs. Institutional knowledge of the ICs is less likely to be lost, and the chance of violating the ICs is small. For sites that transfer to third-party ownership or are privately owned, special care must be exercised in establishing, monitoring, and enforcing restrictions. For the length of time ICs are needed, current and future landowners must be aware of restrictions and land uses that have the potential to create a pathway for contamination.

As a result of subsurface contamination, the majority of concerns are associated with any uses that involve intrusive work in the soils or access to or through contaminated groundwater. For DOE-owned lands, consideration must be given to vandalism, negligence on the part of third-party users, and unintended consequences of the reuse. For sites and lands that DOE does not own, there is little control of site uses except through enforcement actions of ICs by state and local government entities, so routine monitoring and communication with the landowner is critical to ensure continued protectiveness. An additional risk has been experienced when one of these parcels is transferred or sold again and the ICs are not carried with the deed or are even misrepresented from one landowner to the next.

Property reuse falls into several distinct categories that may be used at LM sites. The intended reuse must maintain protectiveness and take required land and resource restrictions into consideration. LM routinely screens its sites for these types of reuse.

### **Property Disposition**

Property disposition involves the transfer of land ownership to public or private entities, accompanied by ICs that define limitations on the use of the land. Before a DOE site commits to transfer property, all IC needs are identified and there is a reasonable expectation that these needs will be met. DOE ascertains that the new owner is aware and understands the IC needs and has the authority, willingness, and actual capability to fulfill responsibilities imposed upon the property for the expected life of existing or planned ICs, including performing needed maintenance and other activities.

LM considers this reuse the most beneficial to all parties. Transfer of the land to other parties returns land to the local tax rolls, returns the land to productive use by other parties, reduces the federal footprint, and potentially saves the federal government money spent in maintaining the land. If the residual contamination can be effectively isolated and managed with enforceable restrictions, LM can transfer entire sites or those portions of sites that are determined excess to LM's needs to others for uses that comply with local zoning and that are not restricted. As stated previously, these sites are in the LM inventory due to the presence of residual contamination, and ICs must therefore be included in the transfer and enforced after the land changes ownership. For example, at the New Brunswick, New Jersey site, soil contamination requires restricted access to the soils in a portion of the site due to arsenic concerns. The site is zoned for industrial uses, was purchased for a waste transfer station, and the ICs were deemed compatible and do not interfere with the new owner's proposed use of the property. DOE signed an enforceable deed notice to ensure that the buyer and all future owners know of the contamination and restrictions. DOE recently transferred an excess portion of the Canonsburg, Pennsylvania site to a local business and included all required ICs and restrictions in the deed of transfer.

Where LM has responsibility for residual contamination, but does not own the property, LM has an integral role in determining reuse during the property disposition. Under the UMTRCA legislation, the Title I sites were cleaned up under a cooperative agreement with the host state. The host state was to secure the land for cleanup of the processing sites (some former processing sites also became the disposal sites), and if the land was then not needed for the disposal cell or was dispositioned to a local governmental agency after cleanup, the land could be deemed excess by that agency and later dispositioned. In these cases, LM has had the opportunity to review and comment on the subsequent sale documents to ensure that ICs were included. These sales also require regulator approval to maintain the integrity of the remedy and the ICs. Portions of the Canonsburg, Pennsylvania; Riverton, Wyoming; and Falls City, Texas sites were sold after regulator review of the action and LM review and approval of the sale documents.

After cleanup of the UMTRCA sites and upon transfer to local entities, the states included all required ICs in the deeds. These restrictions have come into play as the local municipalities look at land uses on the former sites. At the Rifle, Colorado Processing Site, the city government had to secure permission from LM to install a large city facility, including a solar array on the former processing site. Similarly, Gunnison County consulted with LM to ensure they would not violate the ICs by installing a jail at the former Gunnison, Colorado Processing Site. In both cases, LM reviewed the plans to ensure there would be no completed exposure pathway for contamination, the ICs were known and understood, and there was appropriate mitigation as needed for the proposed action.

## **Renewable Energy**

DOE considers renewable energy a top national priority and is the leader for renewable energy in the federal government. In 2007, LM collaborated with the DOE National Renewable Energy Laboratory to screen the LM sites for their potential as renewable energy sites. Renewable energy projects can be accomplished while abiding by the restrictions imposed by the ICs of a site. LM has several large sites in the western states that show promise for both solar and wind



energy. All of the sites include a disposal cell, and many of the sites have a large buffer zone intended to contain any resultant groundwater contaminant plume for many years as natural attenuation occurs. The buffer zone on these sites can be prospective for renewable energy resources particularly as most of the other reuse criteria for renewable energy also exist such as electrical transmission capability, flat or little slope, access, and the existence of high solar or wind resources usually available in the western United States.

LM's renewable energy projects only occur on land that DOE owns or over which DOE has jurisdiction. For these projects, LM can determine the concerns regarding ICs and can tailor the implementation of the project to account for required restrictions.

At the Durango, Colorado Disposal Site which is an UMTRCA Title I site consisting of approximately 120 acres, most of which is the uranium mill tailings disposal cell, LM determined that the site was attractive for solar PV development because of the presence of an existing transmission line, excess capacity in the system, and the flat surface of the disposal cell. LM has two constraints for solar development at the Durango site. One constraint prohibits digging below the frost barrier of the cell to anchor structures related to the solar panels, and the other constraint states that no components of the proposed project may be located in undisturbed areas of the disposal site. Advances in PV technology (primarily used for roof-mounted systems) will allow for a ballast system to support the structures that hold the solar panels, instead of relying on ground-penetrating structural elements. Given these constraints, LM is able to tailor the land lease to allow any technology that addresses the site constraints. In addition, LM has entered into discussions with the NRC, the nuclear regulator, and the Colorado Department of Public Health and Environment, the site regulators, to address any concerns they might have about site integrity and to secure approval to move ahead with the project.

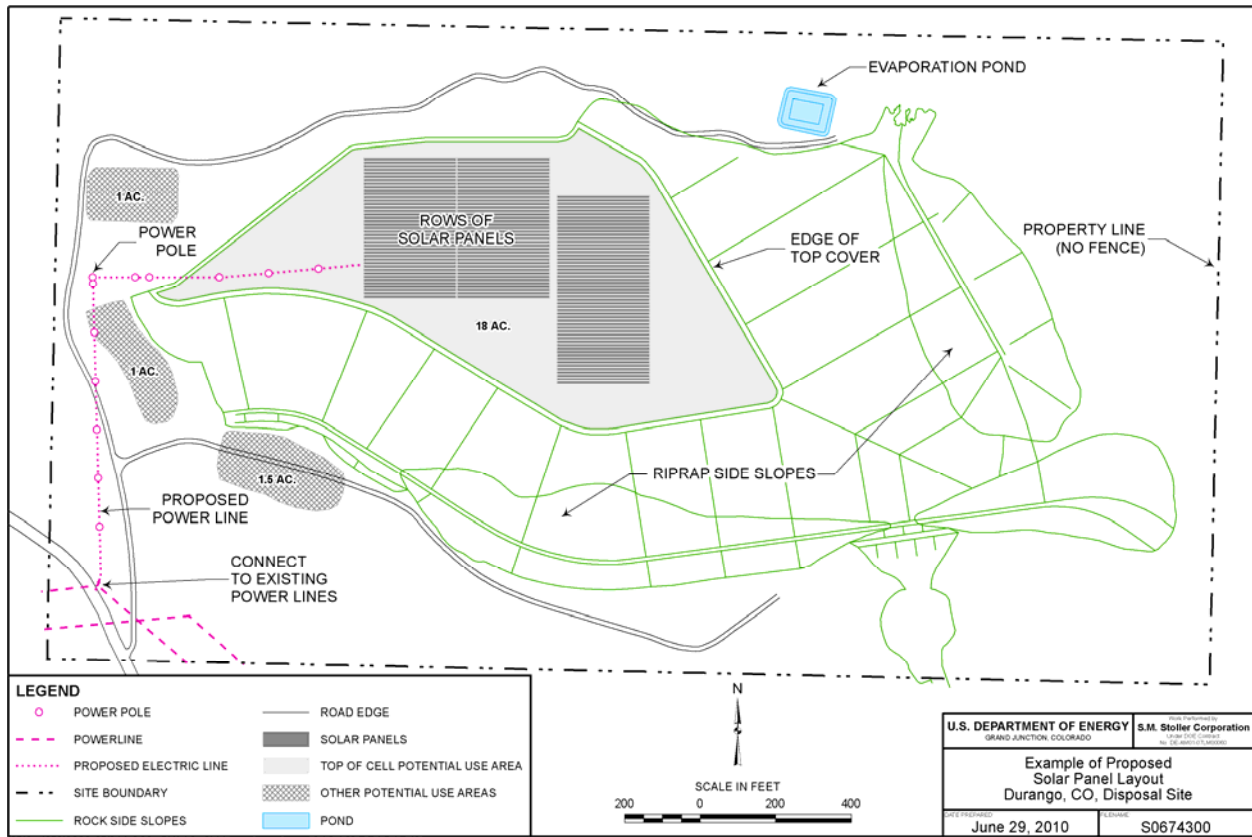


Fig. 2. Layout of the proposed Durango PV system.

Reuse at the Durango site is a good example of the balance between beneficial reuse and maintaining the restrictions needed to preserve the integrity of the site and its associated structures.

## Agriculture

LM coordinates with public and private entities to use LM lands for grazing, crop production, or other appropriate uses consistent with the ICs of the site. LM has large sites in remote areas of the western states. The sites are often surrounded by large ranch operations. Where the infrastructure is currently lacking to develop renewable energy, ranch operations provide benefit to LM by enhancing range conditions, assisting LM in weed control, and providing benefit to the local ranchers who use the sites to graze their livestock. Further, when the disposal site has a vegetated cover, grazing helps inhibit growth of noxious weeds and helps maintain the site in good range conditions. LM must monitor these sites for excessive grazing that can contribute to erosion of the cell cover and associated structures. LM currently has several thousand acres of land in grazing at sites in Wyoming and New Mexico.

Several LM site disposal cells have substantial buffer zones of land that are not impacted by a disposal cell or associated structures. At the site in Falls City, Texas, LM allows a local rancher to use this land to grow hay. In return, the landowner conducts weed control and provides

general maintenance for the site. This arrangement is clearly beneficial for both the rancher and LM.

## **Community**

Many of the sites LM dispositions go to local municipalities for recreational and other uses that benefit the general public. The sites at Monticello, Utah, and Wayne, New Jersey, went to the City and Township, respectively, to be used for public parks under the federal Lands to Parks Program. However, while DOE still retains ownership of a site, LM actively pursues opportunities for development of recreational and educational resources through partnerships with local community-based organizations consistent with the ICs of the site. LM currently has interpretive centers at two former sites—Weldon Spring, Missouri, and Fernald, Ohio. These sites have facilities open to the public and provide a history of site activities and an interactive educational experience. Because public uses of these facilities are casual and nonintrusive, there are few, if any, IC concerns; however, LM did consider the consequences of having the portions of the site generally open to the public. Other community opportunities are being reviewed at this time including short-term camping by the scouts or scientific studies by local schools and colleges.

In August 2010, LM and the Puerto Rico Electric Power Authority (PREPA) finalized a formal letter of agreement that allows for controlled public access to the Dr. Modesto Iriarte Technological Museum (formerly known as the Boiling Nuclear Superheater [BONUS] Decommissioned Reactor Site) in Rincon, Puerto Rico. The Museum provides the Puerto Rican citizens and public with one of the best available educational examples of a demonstration reactor. Although the museum is owned by PREPA, DOE still retains title to remaining radioactive materials at the BONUS site. LM will continue to have oversight responsibility for long-term surveillance and maintenance activities. PREPA assists DOE with site monitoring and inspections of the entombed reactor core on a very frequent basis that was not performed in the past.

## **SUMMARY**

*The LM challenge of beneficial reuse is how to promote and entice beneficial reuse opportunities on underutilized federal land with mission requirements and land use constraints (ICs) that could exist for hundreds or thousands of years, and ensure these constraints continue to be effective and that the beneficial reuse opportunity is cost effective and compatible.* DOE has been actively and successfully establishing, monitoring, and maintaining ICs to ensure protectiveness of human health and the environment at its sites for several decades. Once ICs are established, LM is responsible for continually evaluating the risks and effectiveness of the IC mechanisms. Through monitoring the remedy and the residual contamination, LM can determine if there is reuse potential that ensures post-closure standards are maintained. LM routinely evaluates its sites for risk and, as appropriate, reprioritizes its efforts to develop new ICs or moves to eliminate ICs where they are no longer needed.

Periodic monitoring of the ICs' awareness and the effectiveness of the IC mechanisms helps to ensure that knowledge of the restrictions will continue after personnel familiar with the site and

its restrictions are no longer available. LM has become more mindful that those who are most likely to encounter exposure from residual contamination may not be aware of the restrictions. LM is actively increasing the layers of ICs to cover not only the decision makers for a site (e.g., deeds and deed notices) or reuse activities, but those workers who will be conducting the work (e.g., specific notice in work procedures). LM also continues to monitor sites that have been transferred out of federal ownership to ensure that land use activities are consistent with ICs and that ICs are still effective and appropriate.

LM is proactively searching for beneficial reuse on the lands in its inventory. With this increased emphasis, LM is carefully evaluating all proposals for reuse, ensuring regulator approval for the action, and taking precautions to ensure that all restrictions are honored during implementation of the reuse.