PUBLIC DECISION PROCESS FOR END STATE DETERMINATION FOR THE BROOKHAVEN GRAPHITE RESEARCH REACTOR DECOMMISSIONING PROJECT

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ABSTRACT

Input from local community members, interested stakeholders, and local governments is a necessary element of any decision-making process at the Brookhaven National Laboratory (BNL), located on Long Island, New York. This paper will describe the end-state decision process for the decommissioning of the Brookhaven Graphite Research Reactor (BGRR) and the regulatory framework under which it is being conducted.

In March 1999, the U.S. Department of Energy (DOE) made a major strategic change in methodology for decommissioning the BGRR, which went into operation 50 years ago. Originally, the strategy was to fully characterize, stabilize, and deactivate the shutdown graphite-moderated and air-cooled research reactor over a period of two years and at a cost of approximately $6 million. Under that strategy, the actual decommissioning and cleanup of the reactor facility would not begin until the characterization was completed, scheduled for FY 2002.

Because of interest from stakeholder groups, DOE and BNL decided to initiate aggressive decommissioning of the reactor using the DOE's removal action authority granted by the *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA) and BNL's CERCLA Interagency Agreement with the U.S. Environmental Protection Agency and the New York State Department of Environmental Conservation.

To minimize programmatic risk, the BGRR decommissioning project was divided into seven subprojects. A work sequencing strategy was developed to undertake each of the subprojects by priority. Each subproject first undergoes characterization, followed by decontamination and removal actions. The current regulatory approach involves the preparation of an Engineering Evaluation/Cost Analysis (EE/CA) for the major subprojects, which will then undergo stakeholder review and comment prior to issuance of an Action Memorandum. Subprojects with more clear-cut and immediate risks may be addressed as time-critical removal actions.

Using this approach, the final end-state for the reactor facility will not be known for several years. The Record of Decision will be determined in a composite fashion, based on the final cleanup decisions for the individual subprojects. The more controversial (and costly) decisions, such as the final end-state for the reactor's graphite core and massive concrete and steel biological shielding, is not scheduled to be presented to the stakeholders until the latter part of FY 2001. Getting stakeholder input is critical to determine the final end state as well as successfully plan for the project's future federal funding.

To help bridge this temporal gap, a high-level alternatives analysis was performed. The objectives of the study were to:
a) develop a range of removal action alternatives

b) screen these alternatives against CERCLA criteria and National Environmental Policy Act (NEPA) and stakeholder values
c) present life-cycle cost comparisons for the range of alternatives
d) involve stakeholders in the review and input to the study
e) make recommendations for the final end-state of the BGRR

These recommendations will then be further evaluated in subsequent subproject EE/CAs once better characterization data is obtained. Additionally, a Community Involvement Plan was prepared that identified ways to involve stakeholders early, sustain their involvement throughout the project, and provide opportunities for meaningful and timely input into the decision-making process.

Stakeholder roundtable meetings were held in summer and fall of 1999 to obtain stakeholder values and input on decommissioning alternatives for this study. The focus of the first series in July and August 1999 was to discuss the project with stakeholders and get input on their values and expectations for the decommissioning project. The project team used these values, along with NEPA and CERCLA criteria, to screen the removal action alternatives. Also, the community values are intended to be a basic reference point for discussing the pros and cons of various decontamination and decommissioning alternatives. The second series of meetings in September and October 1999 addressed the *BGRR Removal Action Alternatives Study* and began discussions about the project's potential end-state.

Seven removal action alternatives were analyzed in the *BGRR Removal Action Alternatives Study*. They ranged from a no further action (continue surveillance and maintenance) as one bounding alternative, to full removal of the reactor core, biological shield, and the reactor containment building (Building 701). An intermediate alternative (DOE's baseline planning alternative) considered leaving the reactor core and containment building, but removing all other contaminated structures including the above-grade cooling air ducts, the fuel handling and storage facility, the below-grade cooling air ducts, and contaminated soils surrounding the reactor facility. The final *BGRR Removal Action Alternatives Study* recommended that four of the seven alternatives analyzed be further evaluated in EE/CAs. At this time, it is intended that three EE/CAs be prepared, one each for the fuel canal and associated facilities, the below grade ducts, and Building 701 and the pile.

To provide an opportunity for regular, continuing public involvement during the development of the EE/CAs, a BGRR Working Group has been formed. The Working Group membership consists of local government representatives, environmental groups, BNL employees, and concerned citizens. The BGRR Working Group will be discussed in greater detail later in this paper.

Current information about the project's status and schedule — as well as announcements of upcoming public meetings and roundtables — can be found on The Brookhaven Graphite Research Reactor Decommissioning Project's web page at *http://www.bnl.gov/bgrr*.

INTRODUCTION

The U.S. Department of Energy (DOE) has begun a project to decommission the Brookhaven Graphite Research Reactor (BGRR) located at the Brookhaven National Laboratory (BNL) on Long Island, New York. The BGRR is an air-cooled, graphite-moderated research reactor that was last operated in 1969. Brookhaven Science Associates is decommissioning the reactor for DOE. DOE has lead authority to perform decommissioning under the *Comprehensive*

Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the *Superfund Amendment and Reauthorization Act* of 1986 (SARA), and the *National Environmental Policy Act* of 1969 (NEPA). Under this authority, the decommissioning project is being carried out as a series of removal actions to achieve environmental cleanup at the Laboratory.

The primary objectives of the BGRR Decommissioning Project are to remove and/or permanently isolate sources of contamination, reduce any potential threat to public health and the environment, comply with all local, state and federal regulatory requirements, address community and stakeholder values, and retire a facility that is no longer needed by DOE.

In FY 2000, a *Removal Action Alternatives Study* (RAAS) was prepared for the BGRR Decommissioning Project. The purpose of the RAAS was to evaluate a range of Removal Action Alternatives for final decommissioning of the BGRR. The RAAS was not intended to serve as a Feasibility Study or an Engineering Evaluation/Cost Analysis (EE/CA); rather it was intended as a screening tool and preliminary assessment to determine how the decommissioning project alternatives compare to the CERCLA criteria and NEPA values that apply to the project. In addition to its screening function, the RAAS may be used as the basis for one or more future EE/CAs involving a more detailed evaluation of alternatives for individual sub-projects and removal actions.

The process for determining the final end state for the reactor complex necessitates early and ongoing opportunities for stakeholder involvement and input. Early on, however, the project team became aware that there were going to be limited opportunities to interact with stakeholders beyond those occasions necessitated by regulatory compliance. To provide an opportunity for regular, continuing public involvement during the development of the EE/CAs, a BGRR Working Group has been formed. The Working Group membership consists of local government representatives, environmental groups, BNL employees, and concerned citizens.

History of BGRR

The BGRR was the first peacetime reactor constructed in the United States to provide neutrons exclusively for research purposes. Construction of the BGRR was completed in August 1950, and the reactor pile reached criticality on August 22 of that year. During its operation, the reactor contributed to many scientific and technical advances in the fields of medicine, biology, chemistry, physics, and nuclear engineering.

The BGRR was designed as an air-cooled, graphite-moderated and reflected reactor, originally fueled with aluminum-canned natural uranium (NU) elements. The original fuel elements were subject to stress-related failures. These fuel failures resulted in the oxidation of uranium metal causing dispersion of uranium, fission product, including plutonium oxide particles to the graphite channels, airducts, and air filters within the reactor facility.

In 1958 the natural uranium fuel elements were replaced with aluminum-clad, enriched uranium-aluminum alloy plate fuel elements. The newer enriched uranium (EU) fuel elements were not subject to deterioration or in-service failure with the exception of occasional fuel plate overheating due to blockage in the graphite channels. The nominal power level of the BGRR was 28 megawatts thermal (MWt) during the NU fuel loading, and 20 MWt during the EU fuel loading.

Experimental use of the BGRR terminated in June 1968 with the introduction of the Brookhaven High Flux Beam Reactor (HFBR). The HFBR produced more than a 100-fold increase in neutrons over the BGRR facility and had a lower background radiation level. Deactivation activities for the BGRR were initiated in 1969. The graphite moderator was regularly annealed during operation, and was again annealed in 1970 to remove any residual stored energy. Following permanent shutdown, the control rods were disconnected from the drives and inserted into the graphite reactor pile. The biological shield penetrations for the control rods were covered with metal plates that were tack-welded into place and the experimental openings were closed or plugged.

Between 1985 and 1986, the piping and equipment were removed from the water treatment and canal house, the sumps and drains in the east yard pads were sealed, paint flaking from the walls of the canal walkway was scraped, and all accessible areas in the canal facility were cleared of debris. The BGRR facility was described as being in a safe shutdown condition by the U.S. Atomic Energy Commission (AEC) and became an "orphaned" facility within the DOE complex.

Regulatory Framework

The BGRR was identified as an Area of Concern (AOC) in the May 1992 Interagency Agreement (Federal Facilities Agreement) between DOE, the U.S. Environmental Protection Agency (EPA), and the New York State Department of Environmental Conservation (NYSDEC). There are four sub-AOCs, described as a) BGRR Canal Contaminated Soils, b) Underground Ductwork Contaminated Soils, c) Spill Sites Associated with the East Yard, and d) Pile Fan Sump Soils. Under the Interagency Agreement (IAG), DOE must first address specified AOCs as part of the environmental cleanup program at BNL. Most of the environmental cleanup activities are covered by CERCLA, including facility decommissioning, which may be managed as either time-critical or non-time-critical removal actions. In conjunction with CERCLA and other federal laws, NEPA establishes policies and goals for protecting the quality of the environment. In accordance with DOE Order 5400.1E, and 10 Code of Federal Regulations (CFR) 1021, the consideration (values) of NEPA must be evaluated during the CERCLA process.

Compliance with the *National Historic Preservation Act* is another requirement pertinent to the BGRR Decommissioning Project. In accordance with this Act, the BGRR facility was assessed and found to be historically significant and potentially eligible for listing on the National Register of Historic Places. Eligibility for listing on the National Register requires that the project identifies effects of decommissioning on the BGRR and develops a mitigation plan to address these effects. Accordingly, DOE has entered into a Memorandum of Agreement with the New York State Historic Preservation Officer (SHPO) with the final *Request for Determination of Eligibility* and final *Determination of Effects Findings*. In compliance with this agreement, a "Researcher's Guide" to the BGRR is being produced, including a video documentary and an interactive CD.

SYSTEMATIC APPROACH TO DEVELOP END-STATE ALTERNATIVES

Decommissioning is a controlled process used to safely retire a facility that is no longer needed. During decommissioning, radioactive and hazardous materials, equipment, or structures are decontaminated, isolated, sealed, enclosed, or removed so that the facility does not pose a risk to public health or the environment.

As mentioned previously, decommissioning of the BGRR requires that we consider CERCLA criteria, NEPA values, and the requirements of SHPO. An additional factor in the decisionmaking process is the opinion of the public. Each of these will be discussed below.

CERCLA Criteria

CERCLA criteria constitute a major category of evaluation criteria for removal actions at the BGRR Decommissioning Project. As shown in Table I, the nine CERCLA criteria are divided into three groups: 1) Threshold Criteria, 2) Primary Balancing Criteria, and 3) Modifying Criteria.

Table I. CERCLA Criteria

Threshold Criteria	
Overall Protection of Human Health and the Environment	This criterion evaluates whether or not a remedy provides adequate protection of human health and the environment, and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.
Compliance with ARARs	This criterion addresses whether or not a remedy will meet all of the applicable or relevant and appropriate federal and state environmental statutes and requirements (ARARs) or whether grounds exist for a waiver. Removal actions under CERCLA are required to comply with ARARs to the extent practicable, or be waived. A list of potential ARARs is included in the RAAS.
Primary Balancing Criteria	
Long Term Effectiveness and Permanence	This criterion assesses the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.
Reduction of Toxicity, Mobility, or Volume	This criterion assesses the anticipated performance of the treatment technologies that may be selected for each of the alternatives.
Short-term Risks to Public Health, Workers, and the Environment	This criterion addresses the period of time needed to achieve protection and any adverse impacts on human health and the environment that may be posed during the construction and implementation period until cleanup goals are achieved.
Ease or Difficulty in Implementing the Alternative	Implementability addresses the alternatives' technical and administrative feasibility. Technical feasibility includes the availability of materials and services needed. Availability includes personnel and technology, off-site treatment, storage and disposal, services and materials, and prospective technologies.
Capital and Annual Operating and Maintenance (O&M) Costs	Each removal action alternative is evaluated to determine its projected cost. The cost factors include direct capital costs, indirect capital costs, and annual costs. Annual costs include surveillance, monitoring and maintenance.
Modifying Criteria	
State Acceptance	This criterion indicates whether state regulatory agencies concur, oppose or have no comments on the proposed alternatives. State regulatory agencies will be asked to comment on the RAAS document and provide their input on the proposed or recommended alternatives.
Community and Stakeholder Acceptance	This criterion indicates whether community members and other stakeholders concur, oppose or have no comments on the proposed alternatives. Community members and stakeholders will be asked to comment on the RAAS document and provide their input on the proposed or recommended alternatives.

NEPA Values/Resources Impacts

In addition to the nine CERCLA criteria, specific environmental resources and NEPA values are considered during the screening and selection of removal action alternatives. Consideration of environmental resources and NEPA values are required to meet the DOE Secretarial Policy on NEPA (DOE 1994) and contributes to a complete evaluation of the removal alternatives. Table II

presents definitions of the NEPA values and resource impacts that were included in the evaluation of the BGRR Decommissioning Project removal action alternatives.

Table II. NEPA Values/Resource Impacts

Transportation Impacts	The proposed decommissioning alternatives are not expected to create any long-term negative transportation impacts. If adverse impacts are detected, decommissioning alternatives will be modified or halted until the impact is mitigated. Commercial shipping, by rail or truck, is a means of transportation that is being investigated to eliminate problems of transport through populated metropolitan areas of New York City and suburban communities.
Ecological Impacts	Removal alternatives are evaluated to determine their potential impact on existing natural resource conditions. Alternatives do not include revegetation or other habitat enhancement activities.
Air Quality Impacts	The proposed alternatives are not expected to cause long-term negative impacts to existing air quality. Short-term effects will be analyzed and measures taken to control or otherwise mitigate any potential for impacts to the air quality during decommissioning activities.
Cultural Resources	Mitigation measures to preserve the cultural and historical significance of the BGRR have been developed and submitted to the New York State Historic Preservation Officer in a draft Memorandum of Agreement. This memorandum outlines DOE's intent to preserve the cultural and historic value of the BGRR facility through mitigation measures.
Socioeconomic Impacts	None of the alternatives has a major impact to the local socioeconomics of the Brookhaven National Laboratory or surrounding communities. The necessary workforce to complete the selected decommissioning alternatives is expected to be readily available.
Noise and Visual Resource Impacts	No long-term noise impacts are anticipated from any of the decommissioning alternatives. Minor short-term impacts may be expected during any major equipment removal and would be mitigated through compliance with standards imposed at BNL.
Irreversible and Irretrievable Commitment of Resources	None of the alternatives would involve irreversible or irretrievable commitment of resources because they would not consume natural or depleted raw materials or fuel and would not require the taking of additional lands for construction or waste management purposes. All waste management activities will use existing facilities or sites that have previously been constructed and permitted.
Direct and Indirect Cumulative Impacts	All alternatives, except Alternative 1, would have positive cumulative impacts to the overall cleanup actions that are being taken at the BNL site. Potential sources of contamination to workers, air, and groundwater are being removed under Alternatives 2 through 7.
Environmental Justice	None of the alternatives would have environmental justice impacts because there would be no substantial economic or health impacts to any potentially affected populations. Therefore, there would be no disproportionate adverse impacts to either low-income or minority populations.

Community Values

Public roundtable meetings were held in the summer of 1999 to discuss the BGRR Decommissioning Project and to determine the values and expectations of the community regarding the planned decommissioning. From these roundtable meetings, a set of community values was developed for the project. For the purposes of the RAAS, the community values were grouped by category and are included in Table III. The removal action alternatives for the BGRR Decommissioning Project were screened against community values as well as CERCLA criteria and NEPA values discussed above. All of the community values, with the exception of cost and

schedule, and communication and trust, are also considered NEPA values. Community members and other stakeholders will have opportunities to provide additional input during the course of the public review and comment periods that are planned for EE/CAs and the draft Record of Decision (ROD) for the decommissioning project.

Table III. Community Values

Environmental Safety and Health	Prevent negative impacts to public health and the environment by minimizing contaminant releases to the air, soil, and groundwater and through direct exposure to hazardous substances. Utilize qualified and experienced personnel, communicate within the project team, and coordinate with appropriate environmental, health and safety professionals, and emergency response organizations to ensure overall project safety, including the safety of workers and the public. Achieve the established environmental clean-up goals and demonstrate that these clean-up goals are met. Exceed the established clean-up goals to extent practicable.
Waste Management, Transportation and Disposal	Minimize the amount of all types of waste generated in order to minimize waste management and disposal costs, transportation impacts, and the potential for environmental release. Maximize opportunities for recycling and reuse of materials, equipment, and structures to the extent that these practices are economically feasible and comply with environmental requirements. When waste is transported, use the route and transportation method that has the least impact on the public.
Cost and Schedule	Maximize opportunities to achieve cost efficiencies and cost savings to the extent that these practices do not adversely affect the protection of public health and safety, and the environment. Assure that adequate funding is available and obtained so that the project can be completed in a safe, timely and efficient manner. Minimize the annual surveillance, monitoring, operations and maintenance costs.
Future Land Use	Determine future land use issues after determining the nature and extent of contamination present. Consider opportunities for reuse of the building and structures following clean up to the extent that reuse is cost efficient, safe, and reflective of DOE, laboratory, and community needs and interests.
Cultural and Historic Resources	Maximize opportunities to preserve and provide public access to the historically significant aspects and educational value of the BGRR facility. Ensure that historic preservation actions do not adversely impact public health, worker safety, or environmental protection. Avoid demolition and removal of unique and culturally significant structures, components, and equipment necessary and desirable from a historic preservation perspective. Consider the life cycle costs for such preservation.
Local Economy and Employment	Utilize qualified workers from the local area, including BNL employees, to the extent possible.
Communication and Trust	Share information with the community in a timely and on-going manner. Use a variety of methods to communicate information and ensure that communications are clear, easy to understand, and straightforward. Avoid the use of technical terms and jargon. Provide regular, on-going opportunities throughout the project for public involvement, information exchange, and input on project decisions. Demonstrate to the community that the project is being conducted in a safe and responsible manner and that those community values are being considered in the decision making process.

It was especially interesting to discover that community values so closely matched CERCLA criteria and NEPA values. This has had a simplifying effect on the work-planning process in that, if we plan our activities to meet local community values, we have met or exceeded CERCLA and NEPA requirements.

It should be noted that approaches that work at Brookhaven National Laboratory may not succeed in other locations. One of the factors that drives opinions of our neighbors, regulators, elected officials — and ourselves as Lab users and landlords — is the recognition that Long Island is situated on a sole-source aquifer. Anything we consider doing must necessarily protect our groundwater. Unlike other national laboratories, BNL's sole mission is science. No weapons work is performed at BNL, so no areas are cordoned off for classified work and closed to public scrutiny. Moreover, BNL covers a small geographic area, compared to other national laboratories. At less than 5300 acres, our neighbors are relatively close to our borders. Construction noise and vibrations need not travel far to affect our neighbors. Finally, we need to be sensitive to limited transportation routes on and off Long Island as we ship waste off site.

WORK PROCESS

All seven of the alternatives were evaluated against the CERCLA, NEPA, and Community Values, and this information was used to assign a ranking among the alternatives. The purpose of this ranking is to provide the basis to screen out alternatives that do not meet the minimum specified requirements and to provide a preliminary rank ordering of the remaining alternatives. A qualitative assessment was then made to show how alternatives compare relative to the evaluation criteria and the Removal Action Objectives. Those alternatives that best meet the criteria were recommended for additional analysis through the EE/CA process. The outcome of the EE/CA, which undergoes public and stakeholder review, is a final removal action decision. The final removal action decision (or end-state decision for the various BGRR sub-project) will be documented in an Action Memorandum. As each BGRR sub-project is completed, a Completion Report is written, which documents the success of the removal action and to the extent that the clean-up goals have been met. At the conclusion of all decommissioning sub-projects, a final ROD will be prepared, which will undergo final approval by the federal and state environmental regulatory agencies.

This methodology is where this project differs from most. You will have noticed that work is occurring "at risk" — that is, removal actions are proceeding without a ROD in place. The decommissioning work is divided into seven sub-projects with a bias for action. Rather than characterize the entire project, the work is done in overlapping stages. Once a subproject is characterized, the removal action begins. While the removal action is occurring, characterization begins on the next sub-project.

As originally planned, each sub-project would have had an EE/CA as part of the decision-making process. The public would have 30 days to read and comment on the viable options, the Action Memorandum would be written, DOE would make a decision, and then the work of the removal action would go forward. An EE/CA, however, assumes that there are choices to be made, and that the public has a reasonable set of alternatives upon which they may comment.

Several of our recent Removal Actions, however, have been performed as "time critical" removals. It should be noted that "time critical" does not necessarily mean that there is imminent danger to the public or to the environment but that no viable alternatives to the proposed plan of action.

The removal of the Above Grade Ducts is an example of this approach. When the BGRR was operating, below- and above-ground ducts were used to move cooling air through the reactor pile through a series of filters and coolers and then through fans before the air was exhausted through the stack. The cooling fans had already been removed, and the below-grade ducts and air filters would be characterized in a future sub-project.

The concrete above-ground ducts were part of the BGRR original construction, and were about 225 feet long. The concrete was showing signs of age and weathering; the surface was beginning to crack and flake. Small fist-sized chunks of concrete had fallen from the ducts (the uppermost portion was about 35 feet in the air) to the ground. Moreover, there was evidence of previous rainwater intrusion into the ducts, and the original exterior surface coating contained lead, asbestos, and PCBs.

At that point, the greatest hazards were to workers (due to small chunks of concrete falling) and to the ground (through contact with the old sealant containing lead, asbestos, and PCBs). The area under the ducts had been roped off, and the area was inspected weekly, after high winds, and after rainfall. Any materials found were removed from the ground.

It was originally assumed that the Above Grade Ducts remediation would go through the normal decision-making process, and that an EE/CA would be performed before making a decision among possible courses of action. During initial characterization of the ducts, however, it was discovered that the ducts were in worse physical condition than was originally thought. The only viable alternatives seemed to be to attempt to repair the ducts until they could be taken down, or to simply take them down. The DOE has agreed that the most prudent action, especially considering worker safety and protection of the environment, was simply to remove the above-ground ducts without further evaluation DOE exercised its "time critical" authority, and issued an Action Memorandum so that work could proceed. This approach was also taken with the removal of the Pile Fan Sump, which was completed in March, 2000.

As work proceeded on the Above Grade Duct removal, it began to appear that the next planned sub-project, the remediation of the Canal House and Water Treatment House, may go "time critical" too. The possibility of a third consecutive "time critical" removal action, on a project that promised active and on-going opportunities for public participation, was a tremendous concern. We took our concerns to the BGRR Working Group who represent local government representatives, environmental groups, BNL employees, and concerned citizens.

BGRR WORKING GROUP

The BGRR Decommissioning Project is, you will recall, working with a "bias for action." Once most of the work is completed, the sub-project Completion Reports will be rolled up into a final ROD. The BGRR Decommissioning Project Team was concerned about the possibility of getting to the end of the project and discovering that members of the community, a regulatory body, or environmental groups objected to what was done and how it was done. It would be difficult to reassess methodologies chosen after the work is complete. It would be time consuming — and costly — to re-excavate an area to prove that we had, in fact, removed all of the material that we claimed to have removed. It would be difficult to educate concerned citizens about five years' work during the ROD's public comment period.

Our solution to these concerns is the formation of the BGRR Working Group. The Working Group was formed in support of the *Community Involvement Plan for Brookhaven National Laboratory*. The Working Group operates at the level of decision making for specific project-level issues. The Working Group, which meets monthly, consists of interested stakeholders who have committed to follow this project through, at a minimum, the pile disposition EE/CA. The Working Group membership includes representatives of civic organizations, environmental groups, regulators, elected officials and, of course, members of the BGRR Decommissioning Project team. The DOE Project Manager sits in and participates in an advisory capacity, but is not a member of the Working Group. There is considerable overlap between the Working Group and membership in the BNL Community Advisory Council (CAC) (a body of stakeholders who

advise the BNL Laboratory Director) and the Brookhaven Executive Roundtable (BER) (a body of stakeholders who advise DOE). The Working Group has given guidance when they felt an issue or up-date should be taken before the CAC and/or BER. While the Working Group has a finite term, it may continue longer at the group's discretion.

The BGRR Working Group Charter states that the Department of Energy and Brookhaven National Laboratory are committed to involving their stakeholders in activities that may impact Laboratory's neighbors. Accordingly, the BGRR Working Group has been formed to create an opportunity for dialogue between stakeholders and the BGRR Project Team. The intent is to help the BGRR Project Team make better decisions through stakeholder input. The establishment of the Working Group ensures that stakeholders have a direct line of communication and input with the BGRR Project Team, and that the Project Team will have the availability of a representative group of stakeholders to act as a community sounding board for planned activities.

According to the Charter, the purpose of the group is to facilitate a cooperative working relationship between the BGRR Project Team and Laboratory stakeholders. This group will enable the development of efficient, effective, and appropriate long-term solutions regarding public, and environmental, health and safety for the BGRR decommissioning project.

Issues that have been of interest to the Working Group include: worker safety, transportation, how sampling and characterization analyses are performed, and groundwater contamination. Presentations have been given on groundwater, the Above Grade Duct Removal Action, transportation, worker safety, and the Engineering Evaluation/Cost Analysis process for the Canal House removal action. Working Group members have, at our invitation, come to the site to watch work being performed.

As mentioned previously, an area of concern for the BGRR Decommissioning Project team has been the possibility of going "time critical" on the Canal House removal action. This concern stems from the apparent contradiction of the team's intent to include public input in the decision process, against the possibility of a third consecutive time-critical action; time-critical decisions do not require a public comment period. When this concern was presented to the Working Group, they suggested that we call them to keep them informed if the decision was made to go time-critical, but expressed no concern about being excluded from the decision process. This is, frankly, exactly where we hoped the Working Group would be: sufficiently informed about the processes and procedures that they'd understand how decisions were made.

Moreover, incorporating community values into the planning process has caused our technical people to plan their work more precisely. The technical staff states that their planning process now contains more detail, since they may have to explain their processes to the public who — do not have the same levels of expertise and do not make the same technical assumptions — and not to colleagues who understand technical jargon. We have found that Working Group members will ask how we decided to position a crane. They will ask exactly how much dose a commuter will receive if they're stuck in traffic next to a segment of the Above Grade Ducts being shipped off site. They will ask how we use new characterization data to update our *Auditable Safety Analysis.* Being prepared to answer these questions has made community involvement an on-going part of our planning process.

OTHER OPPORTUNITIES FOR PUBLIC OUTREACH

We cannot, of course, force members of the public to attend meetings or read fact sheets. However, we can make sure that information is readily available to those who have questions or

care to follow our project. Project web pages (http://www.bnl.gov/bgrr) are updated weekly, members of the project team provide updates to the CAC and BER, and articles about the project appear in the quarterly BNL newsletter ***cleanupdate***. Formal public comment periods are also held for the EE/CAs. Experience with the RAAS has shown us that when a document is released, the public appreciates the opportunity to directly learn about the document in a workshop or open-house format so that questions can be answered and alternatives explained. When EE/CAs — especially the Pile EE/CA, which is expected to be the most controversial — are released, we will again host workshops and open houses to explain alternatives and answer questions.

CONCLUSIONS

The BGRR Decommissioning Project is planned as a series of removal actions under CERCLA authority. In planning this unique regulatory and stakeholder approach for decontamination and decommissioning of the BGRR, the project team could not imagine or anticipate the response or impact — with the exception of a potential cost savings by completing the project one or two years ahead of the initial planning scenarios. Using this approach allows BNL to achieve steady progress in decommissioning and environmental cleanup throughout the project's term. Although this approach offers many advantages, it also presents a number of challenges related to achieving a final ROD and stakeholder involvement. Getting early stakeholder input, and maintaining stakeholder involvement, is crucial to a successful outcome.

The BGRR Decommissioning Project Team, the Laboratory, and DOE are committed to working closely with the public, and continue to be impressed by the stakeholder involvement and dedication to the BGRR project. The project has a long way to go to get to completion, and several challenges must be resolved before we can declare success. Community input serves as a basic reference point for discussing the pros and cons of various alternatives. With early stakeholder involvement in the project, the project team expects early successful completion of the BGRR Decommissioning Project.