IMPLEMENTING CHANGE IN THE FACILITIES PLANNING PROCESS

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ABSTRACT

In the post-Cold War climate of reduced budgets at the national laboratories, the Sites Planning Department at Sandia National Laboratories was faced with the problem of securing funding for capital construction projects in a very competitive environment. Our customer, the Department of Energy (DOE), felt that our requests for new facilities were not always well coordinated with its mission needs. Clearly, we needed to revolutionize the way we were doing business.

To be successful in obtaining approval and funding for future facilities, we recognized the need to concentrate our efforts on project proposals that tap strategic programs at DOE. We developed a series of new processes to identify, evaluate, prioritize, and develop line item project proposals to request approval and obtain funding. A matrixed group of sites and facilities directors was formed to establish criteria and make preliminary recommendations to upper management. Matrixed working groups were also established at the staff level to develop and prepare projects for the prioritization process.

Ultimately, similar processes will be applied to all project types, and a prioritized plan generated for each. These plans will become the blueprint for an overarching strategic site plan. What started as a means of increasing our success in obtaining approval and funding of capital projects has launched a whole new approach to project development that permits incorporation of facilities planning into overall corporate strategic planning.

Background

Sandia National Laboratories (SNL) is an engineering laboratory of approximately 8600 employees in two principal locations with a broad scientific research base and a diverse capability in many high-technology areas. It is one of the multi-program national laboratories of the United States Department of Energy (DOE) and is currently operated by Lockheed Martin Corporation.
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The Sites Planning Department, a part of the Laboratory Services Division, is tasked with three main activities:

- Define future site configuration and development plans to support the SNL mission
- Identify, and develop capital- and expense-funded projects that support those plans
- Produce formal documents that reflect those plans

The Facilities and Sites Planning groups, which are organizationally separate but work closely together, have undergone significant changes in the last several years due to restructuring, reorganization, process improvement initiatives, and other corporate initiatives in an effort to become more efficient and effective at accomplishing their goals. Concurrent with this internal change has come some redirection in the Labs' assigned DOE mission and shifts in the strategic thrusts of the Labs.

One such shift is the reconfiguration of the nuclear weapons production complex, resulting in the consolidation and relocation of certain component manufacturing responsibilities to SNL's New Mexico site. Changes such as this have resulted in corporate initiatives in Site Reconfiguration and District Planning, and generated the need to increase the level of capital construction to accomplish these initiatives. Paradoxically, SNL was simultaneously faced with the post-Cold War climate of reduced budgets at all the national laboratories, with keen competition for available limited funding in the capital construction arena. The difficult challenge facing SNL's Facilities managers was to increase our share of construction funding from DOE in an environment of overall reduced funding. To make matters even more complicated, SNL's reduced funding in recent years for proposed capital projects reflected a decline in focus on project development and weak alignment of proposals with DOE strategic needs.
Where to start?

The first action taken by the managers of Facilities and Sites Planning was to transfer seasoned staff members with broad-based Facilities experience into the Sites Planning Department to fill a gap in the project development capability. The new staff members set about establishing a formal process for identifying, prioritizing, and developing capital line item construction projects for presentation to DOE. (Line items are so called because they are large enough to appear as a separate line in the congressional budget.) The concept they envisioned was to develop all project proposals to the same level of detail, then devise a prioritization mechanism for managers to apply a strategic, corporate perspective to determine the most important projects to SNL. After projects were prioritized, the available resources for project development could be concentrated on the projects most important to SNL's and DOE's mission and most likely to be funded.

The basic blueprint for the new line item project development process was conceived and developed by the Sites Planning Department staff through a series of brainstorming sessions. As a first test of validity, the raw concepts and a "Macro-level" process diagram were presented to the line organizations in the Labs who would typically propose projects in support of their specific programs. After incorporating these comments, the concept was presented to the Facilities and Sites Integration directors and Vice President of Laboratory Services, who approved continued development of the process.

One of the important concepts that emerged in this early stage of process development was the idea of an Integrated Sites Planning Council (ISPC), a group of directors representing two camps:

- programmatic sectors that request projects
- Facilities-related directors who provide services to plan and execute those projects.
A VP-level Building and Facilities Planning Committee (B&FPC) was the traditional body for making corporate Facilities-related decisions (such as which capital investments to pursue), but their breadth of responsibility and limited meeting times precluded the kind of in-depth evaluation required to make informed decisions. The ISPC (pronounced "ice-pick") would add value by reviewing materials prepared by a matrixed staff and prioritizing projects viewing relative merits from a corporate perspective. A matrixed, staff-level group called the Line Item Project Working Group would do all the legwork in gathering information on projects and would prepare the information for presentation the ISPC. The B&FPC wholeheartedly agreed to the concept, and the ISPC began meeting even as the new line item project development process was being defined.

Defining the Process
Meanwhile, the staff of the Sites Planning Department worked diligently to flesh out the framework established and approved for the new process. The overall Macro-level process activities clustered into 5 key subprocesses:

1. Proposal Initiation
2. Prioritization
3. Maintenance of the Prioritized List
4. Project-Specific Marketing
5. Preparation for Submission to DOE

Each of the these elements presented challenges as the staff worked to define the subprocesses in detail.

1. Proposal Initiation
In prior years, a "call letter" had been issued to vice presidents to identify potential line item projects. The new process retained the concept of the call letter, but added the following improvements in response to informal feedback on the previous process:

- broadened the distribution to include directors (one management level below VP's)
- publicized the call in the company's weekly bulletin to increase staff-level awareness
- offered an information session on the new process
- included a standard template for response

The standard template was used for a number of reasons. First, the standard format provided a means of eliciting enough information to screen the requests for appropriateness as a line item project. Second, it provided a uniform framework for a somewhat more detailed document called a Brief Project Summary (BPS). The intent of this summary would be to represent projects to the same level of detail to enable equitable comparison of project proposals. Finally, the template required that proposers identify their internal Sandia sponsors (director or above) and their potential DOE sponsors, which was another step designed to help validate proposals.

The new process called for the Line Item Project Working Group to develop all the project proposals and prepare the materials for presentation and prioritization to the ISPC. To maintain as much impartiality as possible, the Line Item Project Working Group hired a contractor who specializes in architectural programming to take the framework of the proposal templates and convert them into Brief Project Summaries. The summary for each project included a description of the proposed project, programmatic and technical justification, preliminary cost & schedule, and any special requirements with enough detail to make an informed decision about the viability of the project and relative importance to
the corporate mission. Typically, it contained 8-10 pages of text, several tables or figures, and some supporting documentation -- 12-15 pages in all.

The next step, and the place where the Line Item Project Working Group added considerable value, was in condensing the information in the Brief Project Summaries into a two-page Decision Paper. The decision paper briefly reflected the project concept, background, and the most compelling points arguing for and against the project.

2. Prioritization

The most problematic and challenging task in the development of the prioritization subprocess was devising a scoring system. The first scheme presented to the ISPC borrowed heavily from a scoring system originally developed by the DOE to priority rank maintenance and repair needs, and incorporated a mechanism for including economic impact and probabilities, borrowed from another internal system used for budget prioritization. The ISPC felt this system to be too cumbersome and too weighted toward non-programmatic needs. Finally, the Sites Planning staff found and adapted another scheme used in standard decision-making theory which seemed to meet our requirements. Known affectionately as "The Cube", it assigned criteria to each of three axes of a cube. Then, scores from A to D for evaluating each criterion were developed, and these determined the placement of a particular project along each axis. The result was a three-digit score that determined an (x,y,z) coordinate location in the cube. This alpha score was then converted into a numeric ranking as prescribed by the Cube concept. The ISPC approved this system and gave us the three criteria to assign to each axis (in priority order):

- Programmatic
- Benefit-Cost
- Consequences
From this the Line Item Project Working Group developed the A-D ratings for each criterion and assigned preliminary scores to projects based on the information presented in the Brief Project Summaries and the Draft Decision Papers. These materials were compiled and presented to ISPC for review.

The real benefit of the Cube scoring system was that it revealed "clusters" of projects of approximately equal importance. This simplified the process for the ISPC, since they could present projects to the VP-level Building and Facilities Planning Committee for approval in three tiers. The most important projects were assigned to Tier 1 and recommended for immediate development and presentation to DOE. Tier 2 projects were viewed as legitimate proposals, but not timely, and were recommended for development at a later date, as their viability ripened. Projects in Tier 3 were acknowledged as addressing legitimate problems or issues, but which were not viable or likely candidates for line item funding. ISPC referred these projects to other working groups to seek alternative solutions.

3. Maintenance of the List
After the B&FPC approved the 3-tiered list, it acquired legitimacy as being reflective of corporate mission needs. However, Facilities and Sites Planning management and staff recognized that corporate needs, funding levels, congressional climate, and other market influences fluctuate in ways that might affect the priorities established in the original list. To maintain flexibility in the prioritization process, the list is designed to adapt to such change. Although the list will be formally reviewed and revised each year (i.e., each cycle of the process), the ISPC and B&FPC have the prerogative to allow projects to migrate between tiers and to add new projects to the list between reviews, if urgent needs arise.

4. Project-Specific Marketing
The challenge of trying to increase capital funding at Sandia in a climate of reduced overall DOE funding provided the motivation for this aspect of the new process. It was clear that competition for limited funding would be keen. In a profit-seeking corporation, when many competitors are vying for the same market segment, "marketing" can make the difference between profit and loss. While this concept may not seem applicable to a corporation like Sandia National Laboratories, it suggests some tools to help answer the challenge.

In the DOE line item proposal process, many factors can make or break a project proposal. These key factors include:

- Appropriate and internally aligned sponsorship at SNL and DOE
- Knowledge and consistent buy-in across several chains of command (programmatic, project management, budget)
- Knowledge and consistent buy-in at multiple hierarchical levels within these chains

Our recent experiences in trying to secure funding for proposed line item projects suggested that some of these key factors had not been addressed. For example, a project might have programmatic support at DOE Headquarters, but might not have been properly developed and presented to the local DOE project management group, which must verify project viability before sending the proposal to Headquarters. These kinds of failures to "work the system" resulted in roadblocks to securing funding.

The new process advocates the formation of a "marketing" team and the preparation of a project-specific marketing plan. Such a plan will:

- identify all appropriate members of the marketing team and designate a leader
- establish how the team will do business (meeting frequency, reporting to ISPC, etc.)
- specify DOE sponsors and SNL champions
• identify project-specific marketing opportunities at multiple hierarchical levels across multiple chains of command
• establish action items to take advantage of these opportunities
• assign team members to action items
• establish a schedule with milestones for accomplishing action items

Project-specific marketing is simply a systematic approach to ensuring that sponsors at all levels are aware of our top priority projects and understand how they address DOE and SNL mission needs.

5. Preparation for submission to DOE
The final phase of the project development process involves submitting proposals for top-priority projects to the DOE. Agency orders and guidance outline the requirements for submitting proposals for consideration. The requirements are aimed at providing DOE with enough information about the project to demonstrate:

• a basic understanding of the proposed project
• how the project meets SNL and DOE mission needs
• the anticipated scope, cost and schedule
• any anticipated problems, issues, or special concerns
• fit with overall sites planning and corporate strategic planning

In short, it provides DOE with enough information to make an informed decision to allow SNL to proceed with conceptual design. This decision milestone is known as Key Decision Zero (KD-0). An unexpected benefit of the new process was that most of the information required by DOE to submit a project proposal for KD-0 was already included in the Brief Project Summary that had been prepared. It took little effort to reformat the Summary and
polish it to address DOE's requirements. This permitted a timely response to DOE when they requested that we accelerate delivery of our project proposals after the B&FPC approved the 3-tiered list.

Receipt of KD-0 on a given project marks the end of the Project Development Process and the beginning of the Project Management Process. When this occurs, the project is transferred to the Corporate Construction Office for execution.

Results & Conclusions
The first prioritization of line item projects was completed in May and June, immediately followed by preparation of top priority, Tier 1 project proposals for submission to DOE. The subprocess for maintaining the list has yet to be tested, and the development of the first project-specific marketing plans are just getting underway. Although the new project development process has yet to complete a full cycle, feedback has already been solicited and received from participants in the proposal initiation subprocess, with generally favorable responses and excellent suggestions for improvement in the next cycle. For example, we will continue to use an independent contractor to prepare the brief project summaries, but will try to target our information session to the individuals who actually propose projects, instead of the laboratory population at large.

On a larger scale, the development and implementation of the line item project development process has brought several benefits to Sites Planning and to the corporation as a whole. The coordinated effort required by the Sites Planning staff (several of whom were new to the department) to develop the new process helped cement productive working relationships and developed a strong sense of teamwork in a short period of time. The matrixed Line Item Project Working Group, which gathered and prepared decision-making materials for the ISPC, experienced similar benefits that cut across several organizational
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boundaries. The challenge to increase the capital funding at SNL in a climate of reduced overall DOE funding provided the impetus to Facilities and Sites Planning managers to reestablish a strong project development capability. And on a higher level, the successful implementation of this process is viewed as a step toward improved corporate decision-making, where decisions are:

- pushed down to more appropriate levels
- higher quality
- more information-based

The Vice Presidents now see the value of appointing the ISPC as the focal point for all Sites and Facilities issues, (including prioritized planning for all types of projects), and to use matrixed, staff-level working groups to compile information to support the decision-making process. The resulting prioritized plans for various types of projects will then become the blueprint for an overarching strategic plan. By funneling all such decisions through one corporate body, an integrated approach can be applied that permits Sites and Facilities planning to be driven by corporate strategic needs. In summary, what started as a means of increasing our success rate in obtaining approval and funding for capital projects has launched a whole new approach to project development that permits incorporation of facilities planning into overall corporate strategic planning.

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This work was supported by the Department of Energy under Contract DE-AC04-94AL85000.

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