USE OF COMPREHENSIVE NEPA DOCUMENTS TO REDUCE PROGRAM RISK

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ABSTRACT. Sandia National Laboratories operates DOE's Kauai Test Facility (KTF) on the western coast of the Hawaiian island of Kauai. In July 1992, DOE approved a comprehensive Environmental Assessment (EA) covering ongoing and future rocket launches of experimental payloads.

The successful completion of this complex assessment resulted in these benefits:

- Integration of regulatory compliance requirements
- Reduction in project delays through simultaneous approval of ongoing and foreseeable actions
- Facilitation of the use of appropriate categorical exclusions
- Reduction of the risk of litigation by avoiding segmentation
- Provision of the opportunity for credible cumulative impact analysis.

The KTF EA, as do all properly crafted NEPA documents, fulfilled two basic objectives:

- Consideration of environmental values early in the planning and decision making process
- Public disclosure.

These objectives can also be considered to be benefits of preparing comprehensive NEPA documents. However, proponents of an action are not as dedicated to these twin NEPA objectives as they are motivated by NEPA's ability to reduce program risks. Once the KTF environmental assessment was underway, it was apparent that reducing risks to the program, budget, and schedule was the main incentive for successful completion of the EA.

The comprehensive or "omnibus" environmental assessment prepared for the KTF is a de facto "detailed statement," and it is also a good example of a "mitigated FONSI," i.e., mitigation measures are essential to render some potential impacts not significant. Because the KTF EA is a broad scope, umbrella-like, site-wide assessment, it "bounds" the impacts of continuing and proposed future actions. The successful completion of this document eliminated the need to review, document, and gain approval individually for numerous related actions. Also, because it supported a Finding of No Significant Impact (FONSI) after identifying appropriate mitigation, it also eliminated the need for an environmental impact statement (EIS).

This paper discusses seven specific ways in which the KTF EA reduced program risks and supported budget and schedule objectives.

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DISCLAIMER

1.0 INTRODUCTION

The Sandia National Laboratories (SNL) operates the Kauai Test Facility (KTF) on the western coast of the Hawaiian island of Kauai for the U.S. Department of Energy (DOE). The KTF, which is a tenant of the U.S. Pacific Missile Range Facility (PMRF), fulfills multiple roles in supporting DOE research and development activities including launching of rockets carrying experimental non-nuclear payloads. Most of these launches are targeted to various areas of the South Pacific including the Kwajelein Atoll and the Marshall Islands. Figure 1 shows the location of the KTF and the PMRF.

In 1992, a broad-scope, programmatic type of Environmental Assessment (EA) was prepared to comply with the National Environmental Policy Act (NEPA). It was intended that this document serve as a omnibus EA that would include or "bound" the environmental impacts of ongoing as well as future operations that could reasonably be anticipated. Descriptions of proposed actions and alternatives, and of the affected environment, were structured so as to be as comprehensive as possible.

Potentially controversial issues that could pose risks to KTF experiments in the future were thoroughly analyzed. These included such sensitive resources as Native Hawaiian burial grounds, sensitive plant and bird species, the threatened Pacific green sea turtle, restriction of beaches from recreation access, noise associated with rocket launches, and the near proximity of a State park. Appropriate Hawaii State agencies were consulted and kept informed throughout the EA preparation process. The DOE issued a FONSI as provided by NEPA regulations in 40 CFR §1501.4(e) on July 17, 1992.

The Spring 1991 issue of the Federal Facilities Environmental Journal carried an article on "NEPA As a Tool for Reducing Program Risk to Programs and Program Managers." The elements given as influencing the degree of risk included: the proposed action and alternatives, schedule, budget, affected environment, agency consultations, permits, potential impacts, and public involvement. The thrust of the article is on long-term program risk, with NEPA viewed as a decision-maker's tool that can reduce risks ranging from an injunction for NEPA non-compliance to risks of criminal penalties for failing to comply with other environmental laws and regulations that should be addressed in NEPA documents. Although NEPA itself has no criminal or civil penalties, the NEPA mandate to integrate environmental review with other environmental laws may, through such integration, indirectly reduce the risk of such penalties. While all of these risks must be considered in implementing the NEPA process, the "bottom line" risk is inordinate and unacceptable project delay caused by a court injunction obtained by a public intervenor group or internal enforcement of NEPA by the sponsoring agency.

The following discussion focuses on how the risks of litigation and internal agency enforcement, with their accompanying adverse impact on schedule, budget, needed permits, and public perceptions, can be mitigated through preparation of broad-scope, comprehensive, programmatic-like NEPA documents prepared for a single site or facility.

The Secretary of Energy's February 5, 1990, National Environmental Policy Act Notice (SEN-15-90), provided directives intended to bring the DOE into full compliance with NEPA. It set in motion events that led to a major commitment to the principles and practices underlying the Act. New requirements have greatly increased NEPA compliance activities. Included in the new NEPA rule are requirements for the preparation of site-wide NEPA documents.

On April 24, 1992, the DOE published its NEPA implementing procedures (57 FR 15122). The final rule, codified at 10 CFR Part 1021, incorporates policy initiatives instituted by SEN-15-90 and includes an expanded list of typical classes of actions that require NEPA review. This rule is more specific and detailed than the DOE's former NEPA Guidelines of December 15, 1987 (52 FR 47662) which the new rule revoked.

Recent DOE policy initiatives on NEPA compliance constitute a historical turning point. Four of these initiatives are: (1) terminating use of the Memorandum to File (MTF); (2) expanding the list of categorical exclusions; (3) directing that NEPA requirements be considered early in the planning process; and (4) enhancing public involvement. Each has led to the increased importance of comprehensive NEPA documents in reducing program risk.

2.0 DOE'S USE OF SITE-WIDE ENVIRONMENTAL IMPACT ASSESSMENTS (EAs and EISs)

The Council on Environmental Quality (CEQ) regulations include among "major federal actions" requiring the preparation of EISs "broad Federal actions such as the adoption of new agency programs or regulations" [40 CFR §1502.4(b)]. These include actions that are in geographic proximity or that have relevant similarities (e.g., similar timing, impacts, and alternatives). Also included are actions that have reached a state of technological development where use of new technologies could significantly impact the quality of the human environment.

This CEQ requirement is closely related to the concept of "tiering" where a broad-scope EIS is used as a baseline document from which subsequent EISs or EAs that are narrower in scope can be tiered (40 CFR §1502.20). For over 20 years, the broad-scope detailed statement has been known as a "programmatic" EIS or PEIS.

The new DOE NEPA implementing regulations referenced above have taken the "programmatic" EIS concept a step further by including requirements for preparation of site-wide NEPA documents that apply to a single DOE site rather than to a regional or national program or activity. (Although not defined in the DOE regulations, the term "site" is intended to refer to large, complex, multi-activity facilities such as Sandia National Laboratories, the Nevada Test Site, and Lawrence Livermore National Laboratory). The DOE regulations require preparation of a "programmatic EIS or EA" when required to support a programmatic decision [10 CFR §1021.330(a)]. Site-wide EISs must be prepared for "certain large, multi-facility DOE sites" while EISs or EAs, may be prepared for other sites to address all or merely some selected functions [10 CFR §1021.330(c)]. The KTF, a relatively small DOE facility, clearly qualified for a site-wide EA.

Figure 2 illustrates how a successful comprehensive NEPA document such as the KTF site-wide assessment may eliminate the need to gain approval individually for numerous related actions. Proposed actions (Pas) have environmental impacts that are "bounded" in a properly crafted assessment. However, not all actions can be covered even in a comprehensive assessment. Undoubtedly, some actions (e.g., Pa_{10} and Pa_{11} in Figure 2) will be outside any particular environmental impact universe and will require separate assessments. This is because some proposed actions and impacts cannot be adequately known or characterized when the site-wide document is prepared.

The DOE intends that site-wide NEPA documents be used for tiering purposes. The preamble to the April 24, 1992 states:

> A site-wide EIS provides an overall NEPA baseline for a site that is particularly useful for tiering or as a reference when preparing project-specific NEPA documents for new proposals (57 FR at §15128).

Figure 3, the "NEPA Pyramid" illustrates how a comprehensive site-wide assessment, such as was prepared for the KTF, facilitates tiering by providing a compendium of general information on the affected environment. Under the "tiering" concept, project-specific assessments can incorporate pertinent information by referencing the general discussions in the site-wide assessment and concentrating solely on the issues specific to the project under consideration, as provided in the CEQ regulations in 40 CFR §1502.20 and §1508.28.

According to the DOE regulations, site-wide EISs are to be reevaluated every five years through use of a new type of document called a "supplemental analysis." Site-wide EAs, which are clearly contemplated for some sites as more appropriate than an EIS, must also be reviewed in order to determine whether the existing document is adequate or whether a new EA, revision of the FONSI, or preparation of an EIS is necessary. Few site-wide EAs or EISs have been completed since DOE's new NEPA rule was promulgated. However, a number of comprehensive assessments are underway or planned for DOE facilities.

Although the KTF site-wide EA was prepared prior to finalization of the new DOE NEPA regulations, the KTF approach of preparing a comprehensive program document for a single DOE site is consistent not only with the DOE requirement for preparation of site-wide documents but also with the requirement of DOE Order 5440.1E on the "National Environmental Policy Act Compliance Program" (November 10, 1992). The order defines a site-wide NEPA document as:

> A broad-scope EIS or EA that is programmatic in nature and identifies and assesses the individual and cumulative impacts of ongoing and reasonably foreseeable future actions at a DOE site. . . .(Emphasis added.)

The site-wide KTF EAs is "programmatic in nature" in that it addresses both current ongoing rocket launching activities and anticipates those for the foreseeable future. Unless future launches are so radically different from past launches so as not to be "bounded" by the EA impact assessment, preparation of separate NEPA documents for individual launches or experiments can be avoided. Having a "FONSIed" EA in place also greatly reduces the risk of third-party attack on subsequent NEPA documents that may have to be prepared. Of course, at some point the KTF EA will need to undergo review to determine if it remains adequate or needs to be supplemented.

3.0 BENEFITS ACCRUED AND OBJECTIVES MET FROM COMPLETING THE SITE-WIDE EA

Preparation of the site-wide KTF EA provided the following benefits: (1)integration of regulatory compliance in several areas; (2) reduction of project delays; (3) facilitation of the use of appropriate categorical exclusions; (4) reduction of the risk of litigation by avoiding segmentation; and (5) provision of the opportunity for credible cumulative impact analysis. The KTF EA also fulfilled two basic objectives:

1. Early consideration of environmental values in planning and decision making.

2. Public disclosure.

This section expands on each of these benefits and objectives.

3.1 Integration of Regulatory Compliance Requirements

The CEQ regulations require that federal agencies, to the fullest extent possible, "integrate the requirements of NEPA with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather that consecutively" [40 CFR §1500.2(c)]. This requirement is also intended to reduce paperwork [40 CFR §1500.4(k)]. The regulations specifically require coordination with surveys and studies required by the Fish and Wildlife Coordination Act, the National Historic Preservation Act, and the Endangered Species Act [40 CFR §1502.25(a)]. Also, a draft EIS must list all federal permits, licenses, or other approvals required for implementing the proposed action (40 CFR §1502.25). Citing the appropriate CEQ requirements, the DOE regulations also require "coordination" with other environmental review requirements as early as possible in the NEPA review process (10 CFR §1021.341).

By being comprehensive in scope, the KTF EA was able to integrate into the environmental impact analysis and mitigation action plan the requirements of a number of federal and associated State of Hawaii statutes and regulations including: Clean Air Act (CAA); Clean Water Act (CWA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Endangered Species Act (ESA); National Historic Preservation Act (NHPA); American Indian Religious Freedom ACT (AIRFA); Coastal Zone management Act (CZMA); Noise Control Act; and various executive orders and DOE orders and regulations pertaining to the protection of floodplains and wetlands.

Unlike many EAs and EISs, a separate section on "Applicable Environmental Regulations" and how they were being complied with was included in the EA document. In addition to accomplishing NEPA objectives in the area of regulatory compliance integration, the KTF EA serves as a "one-stop shopping" reference for those responsible for KTF regulatory compliance.

3.2 Reduction in Project Delays Through Simultaneous Approval of Numerous Ongoing and Foreseeable Actions

The termination of the Memo to File (MTF) reduced the opportunity for quick turnaround on proposed actions. The MTF was a unique DOE compliance tool that enabled DOE officials to evaluate on a case-by-case basis proposed actions not specifically categorically excluded. The MTF allowed DOE to exclude those actions from detailed NEPA documentation in the form of either an EA or EIS where the action clearly would have no significant impacts. (MTFs were previously used to evaluate some rocket launches at the KTF). The advantage of the MTF was that it provided a mechanism for quick decisions on the required level of NEPA documentation for a proposed action. A disadvantage was that connected actions or actions with cumulative impacts were often ignored or not properly analyzed.

With the elimination of the MTF, several proposed actions at the KTF that previously might have been covered by MTF's were required to be covered under separate EAs. Experiments such at the "Zest Flight Test Experiments," the "Kauai Test Facility Two Experiment Rocket Campaign," and the "Kauai Test Facility CDX Rocket Operation" all required separate EAs. This situation occurred prior to preparation of the KTF site-wide EA. Thus, the elimination of the MTF increased the need for and the usefulness of comprehensive NEPA documents to help prevent adverse impacts to schedules. Had a comprehensive site-wide NEPA document been in place, the above EAs might not have been needed or, if needed, could have been prepared more effectively by "tiering" from a KTF site-wide assessment.

Some of the work proposed at the KTF was funded by other federal agencies (e.g., Department of the Army) with tight schedules. Having to cover new and ongoing activities with separate assessments resulted in a situation where the documentation was often started late and followed by a rush to meet an almost impossible schedule. This type of NEPA "crisis management" made the preparation of a comprehensive assessment to cover new and continuing actions urgent.

3.3 Facilitation of the Use of Appropriate Categorical Exclusions

The CEQ regulations require federal agencies to identify three classes of actions: (1) those that normally require EISs; (2) those that normally require EAs but not necessarily EISs and (3) those that normally require neither an EA or and EIS. The latter class of actions is referred to as being "categorically excluded" from either an EA or an EIS [40 CFR §1507.3(b)].

DOE published an extensive list of actions that the agency believes are categorically excluded as appendices to its new NEPA regulations [10 CFR Part 1021, Subpart D, Appendices A & B]. Included in Appendix B are specific "conditions" that are "integral elements" of the classes of actions considered categorically excluded. Often referred to as "eligibility criteria," those conditions make it clear that categorical exclusions are not automatic; that some additional analysis is required to determine if a proposed action is eligible. The proposed action must be one that would not:

- Threaten a violation of applicable statutory, regulatory, or permit requirements for environmental, safety, and health including requirements of DOE Orders
- Require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators and facilities for treating wastewater, surface water and ground water)
- Disturb hazardous substances, pollutants, contaminants, or CERCLA excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases
- Adversely affect environmentally sensitive resources (threatened and endangered species, wetlands, cultural resources, etc.).

Because the DOE categorical exclusions are narrowly crafted and must meet these eligibility criteria, the KTF program was at risk of having to prepare numerous assessment to demonstrate that each proposed categorical exclusion would meet the eligibility criteria.

In completing the omnibus KTF EA, several critical environmental surveys were completed. An ornithological and mammal survey determined relative densities of bird species and mammalian species at the KTF. Of particular interest was the Newell's shearwater (*Puffinus auricularis newelli*). This pelegic (open sea) species, which once nested on all of the major Hawaiian islands, is now extinct on the other Hawaiian islands. Kauai provides the last Hawaiian habitat for this federally listed threatened species. Newell's shearwater nests during the Spring and Summer months (April to November) in the interior mountains of Kauai. In late Fall, nestlings leave the nesting grounds by themselves shortly after nightfall and head for the open ocean guided by the reflection of moonlight on the water. The inexperienced birds natural attraction to lighted objects may cause them to become disoriented and collide

with automobiles and bright lights that are used for rocket launches or construction.

A Pacific green sea turtle survey found at least 32 green sea turtles (*Chelonia mydas agassizi*), a threatened species, at up to five locations at the KTF. The turtles, as juveniles, inhabits pelagic (open sea habitat and, as adults, benthic (deep sea) habitat around all of the Hawaiian Islands. Hatchling sea turtles may also be disoriented due to illumination. The potential impact of construction activities on the green sea turtle were analyzed in the EA.

A botanical survey identified Adder's tongue or pololei fern (*Ophioglossum concinnum*), a small ephemeral fern, as a species that may be affected by the KTF's proposed activities. Adder's fern is a Category 1 candidate for federal listing as a threatened or endangered species.

A soil sampling survey was undertaken to gather data for the EA. This delineated the extent and concentration of lead, aluminum, and beryllium in the soil at the KTF in order to determine whether the concentrations threaten human health or the environment.

Although an archaeological survey found no significant cultural resources on the surface at the KTF, subsurface testing in one area indicated a potential for subsurface cultural resources.

Although each of these surveys and analyses were conducted to comply with NEPA EA preparation requirements, the data can also be used to determine if future actions proposed for a categorical exclusion meet the eligibility criteria discussed above. In this manner, preparation of the site-wide KTF EA facilitates the appropriate use of categorical exclusions and reduces the risk inherent in using such exclusions inappropriately.

3.4 Reduction of the Risk of Litigation By Avoiding Segmentation in the NEPA Process

The CEQ regulations provide as follows:

> Agencies shall make sure the proposal which is the subject of an environmental impact statement is properly defined. Agencie(s) shall use the criteria for scope (§1508.25) to determine which proposal shall be the subject of a particular statement. Proposals or parts of proposals which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single impact statement. [40 CFR §1502.4(a), emphasis added]

The "segmentation" issue arises when an EIS or EA is prepared on an individual action rather than a group of actions that, taken together, constitute a "proposal." Segmentation occurs when the CEQ requirements pertaining to scope of a NEPA document are violated. The regulations in 40 CFR §1508.25 require that EISs (and, by extension, EAs) consider three types of actions: (1) connected actions (e.g., those that are interdependent parts of a larger action); cumulative actions (with cumulative impacts); and similar actions (such as common timing or geography). Improper segmentation has appeared in a number of highway construction cases where the Federal Highway Administration has attempted to prepare narrow-scope EISs or EAs on small segments of minor highway projects in order to minimize cumulative effects in an EA and avoid the responsibility of preparing an EIS.

Segmentation is also used by agencies to avoid the NEPA "threshold" question: Is there a proposal for a major federal action significantly affecting the quality of the human environment? An action may not qualify as a "major federal action" if the segment addressed is small enough in scope to qualify for a categorical exclusion.

Segmentation is not always avoidable. For example, it may be impractical to address all of the phases of a long-term, multiphase project in one comprehensive NEPA document when the timing, technology, and even the funding for later phases are uncertain or speculative.

Prior to issuance of the FONSI for the KTF EA, several brief EAs were prepared to evaluate single rocket-related experiments. Each document, by not addressing other connected, related, and interdependent activities, ran the risk of segmentation with accompanying legal challenges and associated delays. The KTF EA minimized the segmentation problem by framing a proposed action broad enough to include continuing the historic operations associated with rail-launched rockets; conducting new programs involving vertically-launched vehicles; implementing *"connected"* construction activities (new launch pads, fencing, roadways, etc.); and engaging in future vertical launch and rail-launch programs that differed from current operations.

3.5 Provision of the Opportunity for Credible Cumulative Impact Analysis

The CEQ regulations pertaining to cumulative impact analysis relate to the requirements for NEPA document scope referenced in Subsection 3.4 above: assessing actions that are connected, cumulative, and similar. Three types of impacts must be analyzed: direct, indirect, and cumulative. EISs and EAs are particularly deficient with respect to conducting a credible analysis of cumulative impacts.

The CEQ regulations define "cumulative impact" as:

> [T]he impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. (40 CFR §1508.7, emphasis added).

The CEQ requirement to conduct cumulative impact analyses for connected and similar actions has been regularly upheld by the courts. [See Sierra Club v. Morton, 510 F.2d 813 (5th Cir. 1974) and Friends of Endangered Species v. Jantzen, 596 F. Supp. 598 (N.D. Cal. 1984].

The KTF EA was structured to be comprehensive enough with respect to ongoing and reasonably foreseeable future actions as to make the cumulative impact analysis credible. The impact assessment write-up for each environmental parameter (e.g., air quality, biological resources, and cultural resources) included a separate subsection for cumulative impacts. If future actions at the KTF expand the impact envelope beyond that described in the EA, the documentation will need to be supplemented through preparation of a new EA or even an EIS to, among other things, expand the cumulative impact analysis,

3.6 Consideration of Environmental Values Early in the Planning and Decision Making Process

The primary goal of NEPA is incorporating environmental considerations in federal decision-making. The KTF EA was the first comprehensive site-wide EA performed for this DOE Hawaiian facility. It developed baseline information for the assessment, considered the environmental impacts for both new and continuing activities, integrated NEPA with a broad regulatory review, and developed mitigation measures after consultation with State and federal officials. The KTF assessment provided early consideration of environmental values in DOE planning and decision-making for future activities.

3.7 Public Disclosure

DOE's extensively revised NEPA implementing procedures of April 1992 serve, among other things, the objective of enhancing agency and public review opportunities. Initiatives include: making NEPA documents (including EAs) available to federal, state, and local agencies, American Indian tribes, and interested members of the public; notifying host states or host tribes of DOE's intent to prepare either an EA or an EIS; and providing host states or host tribes with a opportunity to review on comment on DOE EAs prior to DOE approval. However, these enhancements to public involvement slow down the NEPA approval process and, thus, may adversely impact a project's schedule, budget, or other needs. Through the successful completion of the KTF umbrella assessment, public involvement opportunities were made available during the preparation of the EA. For example, State officials were regularly consulted with regarding sensitive species, cultural resources, and State park issues. Consistent with the mitigation action plan detailed in the EA, certain public involvement activities will need to continue including notifications to Hawaii officials and Native Hawaiians. Proposed actions that are clearly covered in the document may proceed without further public involvement.

4.0 CONCLUSION

Preparation of a comprehensive, programmatic-type NEPA document for a single site facility like the KTF can reduce program risks and provide a competitive advantage over piecemeal, fragmented, segmented, "one-project-at-a-time" approaches to NEPA compliance. Necessary activities, can proceed expeditiously, unhampered by NEPA compliance crises, at a facility that has a document in place that bounds the impacts of both ongoing and foreseeable future actions.

Although federal agencies have adopted NEPA procedures, NEPA compliance is not often enthusiastically endorsed by proponents of a proposed action when they perceive the procedural requirements as an impediment to their mission. Proponents of an action may attempt to use the assessment process as a decision-implementation process rather then as a decision-making process. They may commence NEPA documentation late and then rush the preparation of assessments to meet impossible schedules, creating a need for NEPA crisis management.

The DOE requirements for site-wide EAs and EISs can provide a number of benefits to agency programs. It could be advantageous to adopt this approach elsewhere in the federal system.

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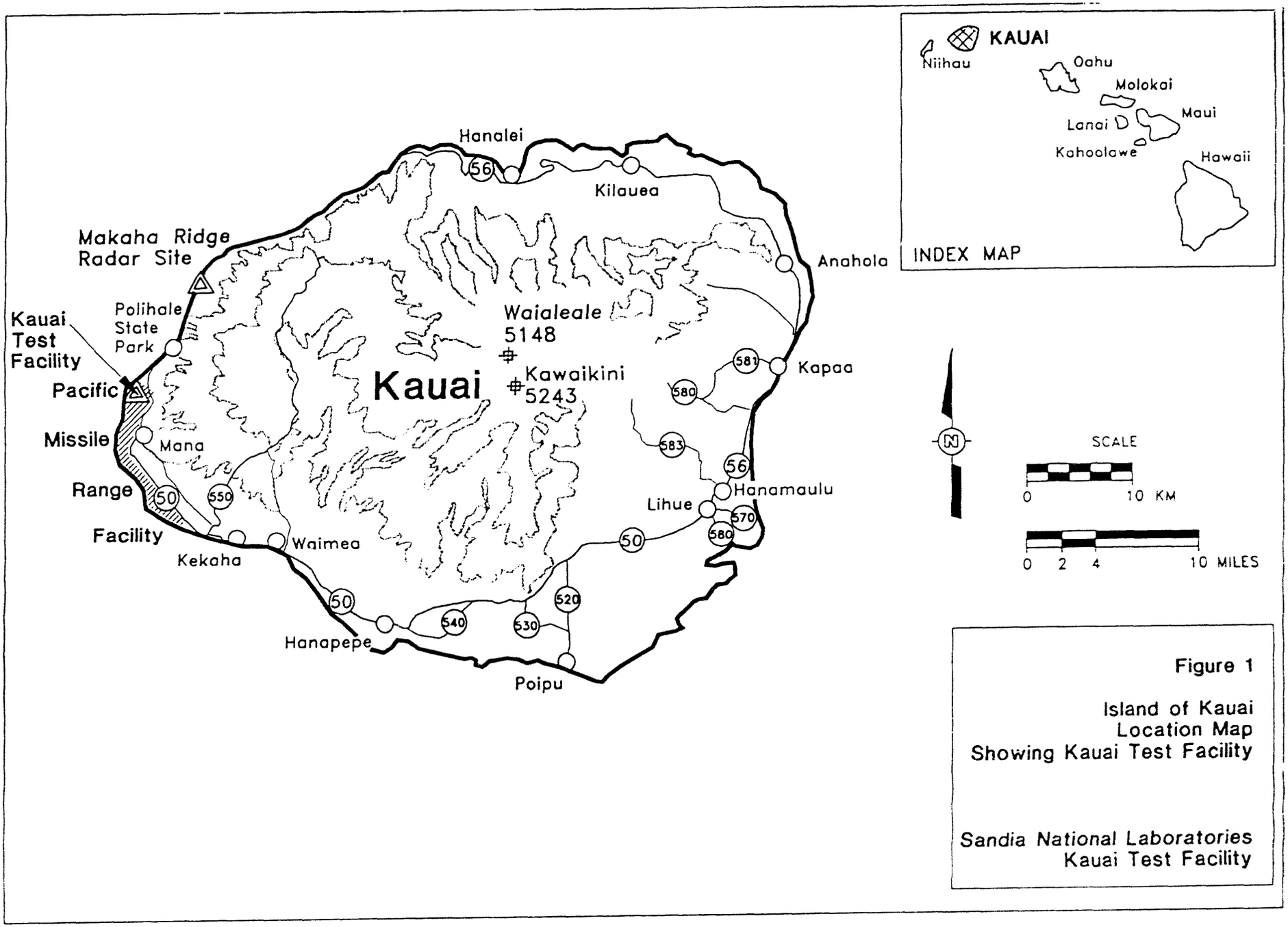

Figure 1

Island of Kauai
Location Map
Showing Kauai Test Facility

Sandia National Laboratories
Kauai Test Facility

NEPA Pyramid

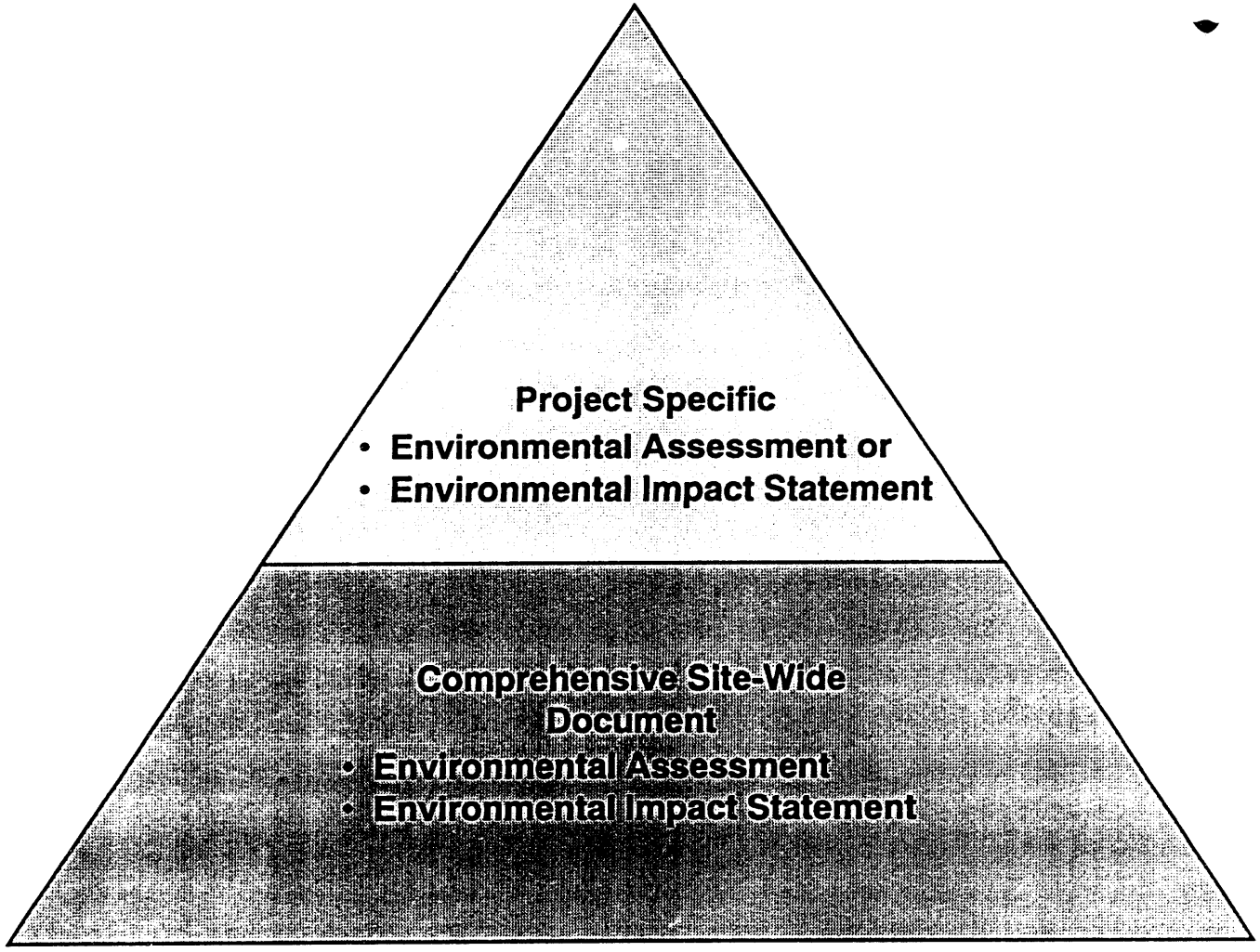

Figure 3. The NEPA Pyramid. Comprehensive NEPA documents facilitate "tiering" (40 CFR §§ 1502.20, 1508.28).

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"Bounding" Environmental Impacts

Figure 2. "Bounding" Environmental Impacts. Successful Comprehensive NEPA documents may eliminate the need to review documents and gain approval individually for numerous related actions.

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