

2 GENERAL ISSUES

This section describes issues that were of broad general interest to the public in their comments on the Draft NIF SEIS. These general issues are referenced or included in the responses to individual comments found in Section 4 of this volume, Volume II of the SEIS.

General Issue 1: Preference for Ceasing Construction for Environmental Reasons

Commenters expressed a preference for ceasing to construct and operate NIF on the basis of concerns that NIF operations would further contaminate the environment.

DOE has found that site contamination at LLNL is being reduced by remediation efforts and improved waste management practices. The SSM PEIS concluded that NIF would not release contaminants to soils or groundwater; therefore, the impacts would be negligible. The trend of declining contamination is expected to continue during NIF operations. This SEIS concludes that it is unlikely that there is significant contamination in the areas of NIF construction that could result in significant effects on human health or the environment. Buried capacitors containing polychlorinated biphenyls (PCBs) were discovered at the NIF site; their subsequent cleanup has eliminated a potential source of future environmental contamination.

General Issue 2: Preference for Ceasing Construction for Nonenvironmental Reasons

Many commenters expressed preferences for ceasing to construct and operate NIF for a variety of nonenvironmental reasons. Commenters provided statements on moral/ethical issues, proliferation concerns, disapproval of nuclear policy, disagreement that NIF is needed, costs of NIF, and disapproval of nuclear weapons.

DOE evaluated these statements of preference, and they are entered in the public record. Although the SEIS is limited by NEPA and its implementing regulations to an evaluation of the environmental impacts of changed circumstances or new information regarding construction and operation of NIF, all public comments will be taken into account in the development of DOE's Record of Decision (ROD). In addition, the commenters are encouraged to pursue their concerns through other avenues of public outreach within DOE.

General Issue 3: SEIS Inadequacy Because DOE Did Not Hold Public Scoping Meetings

Commenters stated that the SEIS is inadequate because there were no scoping meetings for the SEIS. Members of the public felt that they were not given the opportunity to comment on SEIS scope.

Neither the Council on Environmental Quality (CEQ) nor DOE NEPA regulations obligate the preparing agency to hold scoping meetings for a SEIS. In the case of this SEIS, the

conditions and requirements of the JSO largely determined the scope of the analysis. At the time of the Notice of Intent (NOI), DOE evaluated other issues and determined that there were no other changed circumstances or new information that should be addressed in this SEIS. The scope of the SEIS was announced in the NOI, published in the *Federal Register* on September 25, 1998. In addition, the NOI was provided to LLNL stakeholders. The NOI provided a mailing address for those wishing to provide written comments on SEIS scope.

General Issue 4: Breadth of Scope, Including Impacts of NIF Operations

Commenters expressed the opinion that the SEIS was not a NEPA document because the SEIS did not address a broad range of issues related to NIF construction and operation. Commenters stated that the SEIS should address the impacts of NIF operation beyond those identified in the JSO.

DOE has prepared this document according to the applicable regulations for implementing NEPA. The JSO directed DOE to prepare an SEIS evaluating the impacts from continuing to construct and from operating NIF with respect to any potential or confirmed buried hazardous, toxic, or radioactive materials, in accordance with DOE NEPA regulation 10 CFR 1021.314(d). The JSO defined the two-phase approach used by DOE to search for and evaluate buried hazardous, toxic, or radioactive materials in the Stipulated Areas. These phases were to (1) conduct interviews with current and former employees and review historical documents to locate potential waste burial sites and (2) conduct field investigations to locate buried objects or buried wastes. This SEIS contains the results of the two study phases and addresses the environmental impacts of NIF construction and operation associated with the capacitor find and any further known or potential site contamination.

The JSO was the source for the scope of the SEIS announced in the NOI. In addition, DOE evaluated whether there were other changed circumstances or new information that should also be addressed. DOE identified the East Traffic Circle (ETC) contamination discovered at the location of an old waste burial site as such new information. Discussions of the environmental impacts from this discovery and subsequent cleanup action were added to the SEIS.

The impacts of operating NIF — other than those potentially related to any potential or confirmed buried hazardous, toxic, or radioactive materials as analyzed in this SEIS — have already been addressed in the SSM PEIS. The ultimate design and operation of NIF have remained essentially unchanged since the preparation of the SSM PEIS, although the initial level of operations will be lower in some respects. DOE believes that the analysis in that document accurately reflects the environmental impacts of constructing and operating NIF. Therefore, DOE has determined that there were no new information or changed circumstances related to NIF operations, other than those contained in the SEIS, which would require further reevaluation of NIF operations as contained in the SSM PEIS.

General Issue 5: Additional Issues That Should Be Addressed in the SEIS

Commenters stated that certain hypothetical changes in NIF operations should be added to the scope of the NIF SEIS. These changes included:

- *Use of plutonium; uranium and lithium hydrides as targets;*
- *Damage to optics and more frequent maintenance of optics;*
- *Lower energy operations; and*
- *Reduced number of beam lines (a half-sized NIF).*

DOE examined these hypothetical operational changes and has concluded that they are not appropriate topics for the NIF SEIS.

The process for determining whether DOE will supplement the SSM PEIS to address a proposal to use plutonium, uranium, or lithium hydrides as targets was established in the Memorandum Opinion and Order issued by the U.S. District Court for the District of Columbia on August 19, 1998, in *NRDC v. Richardson*. By the terms of that Memorandum Opinion and Order, DOE, no later than January 1, 2004, will either (1) determine that experiments using plutonium, uranium (other than depleted uranium), lithium hydride and certain other materials will not be conducted in the NIF or (2) prepare a Supplemental SSM PEIS analyzing the reasonably foreseeable environmental impact of such experiments. DOE will continue to investigate the need for these experiments and will make the required determination or begin the appropriate SEIS by the specified date. However, until DOE has completed the necessary studies and determined that such experiments are needed, no proposal exists, and it would be inappropriate to begin an SEIS.

Public comment requested that the SEIS address more frequent damage to optics, more frequent maintenance of optics, and more frequent cleaning of optics. DOE has examined this issue and concluded that the impacts to workers and the public from damage to the optics in the beam lines has already been included in the impact assessments conducted as part of the SSM PEIS. The actual frequency at which optics components will have to be cleaned, adjusted, repaired, or replaced would not be determined until the facility is completed and tested. The NIF laser facility includes 192 beam lines consisting of more than 10,000 discrete optical components. The NIF target area provides confinement of tritium and activation products by providing physical barriers and controlling air flow. The facility operates in a pulsed mode; maintenance and repair of the beam lines would not occur during a pulse. The SSM PEIS evaluated risks to workers and the public and generation of wastes for an enhanced mode with a bounding yield. Normal operations are expected to be within those bounds, and normal operations include variations in scheduling of maintenance and repair of optics. For these reasons, DOE determined that this issue was not an appropriate issue or alternative for this SEIS.

Recently Congress directed the National Nuclear Security Administration (NNSA) to review options that would change the schedule for implementing the full design number of 192 beams or options that would possibly operate at a reduced number of beams to allow full demonstration of the system before proceeding with full operation (see Vol. I, Section 1.2). These changes would be modifications of the original proposal, resulting in a reduced project

scope. DOE has examined the environmental implications of implementing these modifications and has concluded that the impacts would fall within the bounds of those already evaluated for the 192-beam design in the SSM PEIS. The SSM PEIS demonstrated that the impacts of the 192-beam design are minor. Furthermore, DOE has concluded that the impacts do not vary significantly among the various options using fewer beams.

The SSM PEIS evaluated operations of NIF in an Enhanced Option Operation (SSM PEIS, Section I.3.2.2, pages I-21 to I-22) with an increased number of yield experiments per year to accommodate greater user needs to an annual total yield of 1,200 MJ/yr (maintaining the maximum design yield of 20 MJ), a maximum tritium inventory of 500 Ci, a tritium throughput of 1,750 Ci/yr, and tritium effluent of 30 Ci/yr. The maximum credible yield of 45 MJ is what the facility can withstand safely and is the same for the Conceptual Design Operations and the Enhanced Option Operations. Operations (e.g., during startup) with fewer beam lines and/or at less energy would result in less yield per shot, less tritium inventory, less tritium throughput, and less tritium effluent (see Section 2.2.2, Vol. I). The SSM PEIS analysis covers the range of impacts in the envelope from initial startup to full operation.

General Issue 6: The SEIS Is Not a Decision-Making Document Because Construction Continued

Commenters stated that the SEIS was inadequate because construction of the NIF continued during the preparation of the SEIS. Commenters stated that the SEIS was a “backward-looking” rather than “forward-looking” document. Commenters felt that the SEIS has little value as a decision-making document.

In the lawsuit Civ. No. 97-936 (SS) (D.D.C.), *Natural Resources Defense Council et al. v Richardson et al.*, the plaintiffs asked that DOE be enjoined from continuing construction. However, no such injunction was ordered, so DOE continued construction activities. When the PCB-containing capacitors were found, DOE ceased construction at the NIF site until the objects and residual soil contamination were handled under an emergency removal action. Following removal, DOE restarted construction that continued during the lawsuit and subsequent preparation of the SEIS.

The SEIS would have been more “forward looking” (i.e., addressing future actions) if DOE had found additional buried objects or sources of contamination. Because the characterization studies did not locate or identify any other potential sources of contamination, the document mainly addressed past activities. DOE carefully evaluated the results of Phase I and Phase II site investigations, which were incorporated into the quarterly reports required by the JSO. If significant contamination had been found in areas of NIF construction, construction could have been halted (depending on the levels), remediation or removal procedures would have been developed, mitigation would have been recommended, assessments of consequences would have been provided in the SEIS, and results would have been incorporated into DOE’s ROD. However, since sources of contamination beyond the initial NIF discovery in the area of NIF construction and residual contamination in the ETC were not found, the SEIS mainly evaluated the investigations and their results.

General Issue 7: The SEIS Improperly Characterized the No Action Alternative

Several comments were critical of the way in which the no action alternative was characterized in the SEIS. Some commenters stated that the two no action alternatives analyzed in the SEIS should have been considered as action alternatives. Others believed that the SEIS did not analyze the most reasonable impacts of the no action alternatives. Some commenters stated that the no action alternative should reflect “abandonment” of the project.

DOE believes that the characterization of no action in the SEIS is appropriate under the circumstances. The proposed action for NIF addressed in the SSM PEIS was construction and operation of the facility. The no action alternative in the SSM PEIS was to not construct and operate the NIF facility. In the 1996 ROD, DOE decided to proceed with construction and operation of NIF. Construction is now ongoing. This situation represents the “status quo” and was analyzed as one construct of no action in the draft SEIS, consistent with guidance issued by the CEQ (see Section 2 of the SEIS).

However, DOE realized that some readers could hold the position that no action should mean “no project” rather than maintenance of the status quo. Therefore, the draft SEIS also included a second construct of no action that would involve ceasing construction of NIF. As explained in Section 2.1.2 of Volume I of the SEIS, DOE does not believe that this is a reasonable alternative, since the need for NIF has not changed and the studies conducted under the JSO found no evidence of additional buried materials. However, the impacts of this second construct of no action were included in the draft SEIS.

DOE believes that both of these constructs are properly characterized as no action and that they should not be considered as action alternatives. As discussed in Section 2.2 of Volume I of the SEIS, potential action alternatives for the SEIS would have included modifying the manner in which NIF would be constructed and operated, in view of the potential for locating more buried material. Since no material was found, such alternatives were judged not to be reasonable.

In response to public comment, discussion of the possible scenarios that could result from ceasing construction of NIF, and the impacts of those scenarios, have been expanded in the final SEIS. Section 2.1.2 of Volume I of the SEIS identifies three options for ceasing construction: “mothballing,” alternative use of the facility, and demolition. Ceasing construction in some cases would mean that some of the construction and operation impacts analyzed in the NIF portion of the SSM PEIS would not occur or would be different. These differences are evaluated in Section 4 of Volume I of this final SEIS.

DOE decided not to add the alternative of ceasing construction and abandonment of the facility, as suggested in public comments, to the final SEIS. As stated in Section 2.2.4 of Volume I of this SEIS, this alternative would violate various laws, regulations, and principles of good management practice. DOE believes that the three options for ceasing construction discussed above are much more realistic possible outcomes of a decision to cease construction. However, it must be emphasized that, for the reasons stated above, DOE does not consider the no action alternative of ceasing construction of NIF to be a reasonable alternative.

General Issue 8: Purpose and Need for NIF and NIF Mission Have Changed

Commenters stated that NIF was no longer needed, concluded that the purpose and need for NIF had changed with the end of the Cold War, and questioned the relationship of NIF to weapons testing. These commenters also requested that the SEIS reexamine the need for NIF and the NIF mission. Commenters also stated that NIF was just a scientific “toy” and that fusion power was not a sufficient purpose or need to justify NIF.

DOE has examined these issues and concluded that the purpose and need for NIF are still as stated in the SSM PEIS. NIF remains an important element in science-based stockpile stewardship (Gioconda et al. 2000).¹ While the NIF has scientific value beyond its role in stockpile stewardship, the stewardship mission of NIF is still primary. NIF has real practical application in nuclear weapons programs. It will allow experimental study of thermonuclear burn in the laboratory. It will extend the range of investigations of important regimes of high-energy-density sciences. Contributions to theoretical science and contributions to development of fusion power are secondary benefits of NIF. Although the end of the Cold War has resulted in major changes in global politics, nuclear weapons are still maintained by the nuclear powers.

General Issue 9: Nuclear Weapons Are Not Needed

Commenters questioned the nuclear policy of the United States. Commenters stated that nuclear weapons are not needed, are inherently dangerous, and have various negative moral and ethical implications. Commenters stated that the NIF would contribute to proliferation of nuclear weapons, because recent events could call into question the security of sensitive information.

DOE evaluated these issues and concluded that they were outside the scope of this SEIS in particular and of a NEPA analysis in general. These issues are nonenvironmental policy considerations rather than changed circumstances or new information with environmental consequences. Commenters are encouraged to pursue other avenues of DOE public outreach to have these issues addressed.

With respect to nonproliferation, DOE has studied this issue and concluded that proliferation of nuclear weapons is not an issue with regard to NIF. NIF does not present a significant nonproliferation risk. The nature of the experiments at NIF have little potential to contribute to proliferation of nuclear weapons. In spite of recent reports that could call into question the security of sensitive information, DOE has taken substantial actions to ensure that the technical proliferation concerns are acceptable. DOE has a long history of secure operations. Experiments at NIF would provide basic scientific information that is needed for the models on which stockpile stewardship is based. The results of many of the NIF experiments will be available to the scientific community at large. NIF has been planned to accommodate various

¹ Gioconda, T., C.B. Tarter, J.C. Browne, and C.P. Robinson, 2000, “The National Ignition Facility and Stockpile Stewardship,” white paper, U.S. Department of Energy, Apr. 24.

national and international research and development (R&D) groups without compromising national security.

General Issue 10: Costs of NIF

Commenters were concerned with recent reports of cost overruns for NIF construction. They stated that NIF was too expensive and was badly managed, and that continued construction and operations were not justified on the basis of costs. Commenters stated that cost overruns for NIF plus the costs of operating NIF were going to change NIF operations.

On December 14, 2000, the Secretary of Energy certified and submitted to Congress a revised cost and schedule baseline for construction of NIF that increased the cost to complete the project and extended the schedule. The scope of the NIF Project has not changed. The revised baseline has the full NIF capability of 192 beams and assures that the funding needed to construct NIF does not create an imbalance in the remainder of the Stockpile Stewardship Program. For FY 2001, the Congress appropriated \$199.1 million of the \$209.1 million identified in the revised Congressional Project Data Sheet for NIF. The language in the fiscal year 2001 Energy and Water Development Appropriations Conference Report (H.R. 4733) requires the NNSA Administrator to study alternative paths and technologies for NIF and to certify the path forward to Congress after March 31, 2001, prior to committing the final \$69.1 million (see Vol. I, Section 1.2). DOE will submit the study results and certify the path forward as requested. DOE has examined the environmental implications of implementing these modifications and has concluded that the impacts would fall within the bounds of those already evaluated for the 192-beam design in the SSM PEIS.

General Issue 11: Characterization Studies

Commenters stated concerns with the thoroughness of the characterization studies and disagreed with the conclusion of the SEIS that there is a “low likelihood that significant quantities of additional previously unidentified buried hazardous, toxic, or radioactive objects remain in the stipulated areas.” Commenters stated that more sampling would have discovered additional objects or contamination.

DOE based the conclusion of a “low likelihood” on the results from Phase I interviews and examination of records and photographs, Phase II geophysical surveys for buried objects in areas suspected of prior disturbance or waste management activities, and Phase II soil borings.

It was technically unjustified and financially unfeasible to increase sampling intensity in regions of the stipulated area where there was no indication from the geophysical studies that buried objects were present. This is a relatively large area with substantial previous investigations. There are more than 450 groundwater monitoring wells and more than 1,000 soil borings on the LLNL site. In order to most efficiently search for unknown buried materials, DOE followed a two-phase screening approach set forth in the JSO. That approach was based on a review of site records to identify potential old burial sites and geophysical surveys to direct

detailed sampling of soil. DOE conducted four magnetometer surveys, two electrical conductivity studies, and one ground penetrating radar survey. Where these surveys detected anomalies that might represent objects or materials, DOE dug 31 soil boreholes and made 11 test excavations. To determine if any unknown buried materials were causing groundwater contamination, DOE installed six new groundwater monitoring wells. Soil borings and groundwater wells were placed in the locations where detection of any migration of contaminants from possible buried wastes was most likely. None of these borings or wells indicated contamination of soils by unknown buried wastes.

General Issue 12: PCB Contaminants in the East Traffic Circle Area and NIF Footprint

Commenters wondered why the characterization studies did not identify the PCB contamination later discovered in the ETC Area.

This is because the ETC was known to be an old waste disposal site that had already been remediated. Geophysical surveys in the area did not identify any further buried objects or other unknown sources of contamination. None of the methods employed for the site investigations could locate isolated, small points of residual contamination at the surface. Samples were taken during ETC construction activities to ensure that residual contamination was below acceptable levels. When samples showed PCB concentrations above initial regulatory action levels, additional cleanup actions were taken in consultation with the appropriate regulatory agencies.

Commenters wondered if geophysical studies and soil sampling were performed in the NIF construction footprint. DOE performed additional geophysical investigations and soil testing adjacent to the NIF excavation but not in the excavation itself. In the excavation, soils had already been removed to below the level where waste burial could have occurred. Buried wastes are expected to be within 1 to 3 meters of the surface. The NIF excavation is much deeper than that (greater than 10 meters), reaching soils that have been buried since prehistoric times. These levels include depths where mammoth and other fossils were discovered. Remains from waste disposal activities in the mid-20th century are not expected to be buried at those depths.