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CONSTRAINT OR OPPORTUNITY

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Martin L. Rogowsky  
U. S. Department of Energy  
Washington, D.C. 20585

INTRODUCTION

This paper is intended to provide an insight on the relationship between the Federal Government's responsibility to protect the human and natural environment and its responsibility to assist in the development of new energy technologies to assure an adequate supply of domestic energy resources. Both responsibilities are based on the Government's desire to improve the quality of life for its citizens.

Specifically, this paper will describe the Federal Government's activities in carrying out its responsibilities under the National Environmental Policy Act (NEPA) while pursuing the development of direct coal liquefaction. First, I will briefly describe the NEPA process. Then, using the Solvent Refined Coal (SRC) demonstration plants as examples, I will describe how the Department of Energy (DOE) responded to its NEPA responsibilities. Finally, the impacts of the NEPA process on the development of direct coal liquefaction will be examined. Has NEPA been a constraint on the development of a commercial direct liquefaction industry, or has NEPA provided an opportunity that may prove to be a significant benefit to the fledgling synfuel industry?

NEPA

NEPA requires the Federal Government to follow certain procedures prior to taking a "major Federal action significantly affecting the quality of the human environment."<sup>1</sup> In 1979, the Council of Environmental Quality (CEQ) issues regulations<sup>2</sup> on how to implement NEPA, which superseded its previously published guidelines. All Federal agencies are now covered by these CEQ regulations.

In order to trigger the requirement to prepare an environmental impact statement (EIS) under NEPA, a Federal agency must first determine that its proposed action will constitute a "major Federal action" as described above. If an agency is not sure whether its proposed action will meet the test of a "major Federal action," it can prepare an environmental assessment<sup>3</sup> which is a document that sets forth the significant environmental issues associated with the

proposed activity. Based on this environmental assessment, an agency would determine that its proposed action either is not "significant" or it would determine that its proposed action is "significant" and that an EIS would be required prior to the agency making a final decision on the proposed action.

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Once a decision is reached by a Federal agency to prepare an EIS, a number of procedural requirements are set in motion. These procedures are required because NEPA is a public-oriented process and these procedures are mandated to ensure public involvement. A Notice of Intent<sup>4</sup> is published in the Federal Register. Usually a public scoping meeting<sup>5</sup> will be held at which time the public can provide oral or written suggestions as to which environmental issues the agency should investigate and analyze in the EIS. The agency would then prepare an implementation plan<sup>6</sup> which would provide the outline for preparing the draft EIS, including which alternatives the agency will address and the major environmental issues to be discussed. Following the preparation of the draft EIS, it is filed with the Environmental Protection Agency (EPA) and a Notice of Availability is published in the Federal Register. The public is usually given the 45-day minimum comment period in which to provide written comments to the agency on the adequacy of the draft EIS. Like the scoping meeting referred to above, a public hearing on the draft EIS is not required, but agencies often hold such hearings in locations near where the proposed activity will take place in order to receive additional public comments. The final EIS is prepared and published once the agency has responded to all of the substantive comments received during the comment period. Responses to comments appear in an Appendix in the final EIS. The final step of the NEPA process is the publication of the Record of Decision<sup>7</sup> in the Federal Register, which cannot occur until at least thirty days after the Notice of Availability of the final EIS has appeared in the Federal Register. Only after the Record of Decision is published may the Federal agency proceed with the proposed action.

I have just described the mechanics of the NEPA process involving the preparation of an environmental impact statement. It is a procedural process, not substantive. The EIS is a "full disclosure" document. Its purpose is to identify, describe and analyze the environmental impacts associated with the proposed Federal action and to identify and analyze the reasonable alternatives to the proposed action. The severity and significance of these impacts are then to be considered by the agency in reaching a decision. The public also can consider the significance of the impacts caused by the proposed action because the EIS must disclose this information. However, the decision to proceed or not to proceed or to proceed at a different location or with a different design, is left to the discretion of the Federal agency. The public is afforded the opportunity to become

knowledgeable about the proposed action and to participate in the preparation of the EIS, but the final decision rests with the Government, subject, of course, to judicial review.

#### NEPA and SRC-I

Direct liquefaction activities have been pursued by the Federal Government for several years. The SRC process was proposed for demonstration at commercial-scale by the Carter Administration and two plants--SRC-I and SRC-II--have been pursued by DOE and its industrial participants for the last several years. The NEPA process has played an integral part in the planning for these plants.

DOE quickly determined that the construction and operation of the SRC plants would be "major Federal actions significantly affecting the quality of the human environment." Scoping meetings were held for both EIS's, with SRC-II preceding SRC-I in time. The SRC-II draft EIS, published in May 1980, received much criticism from the public, specifically from several public interest groups and the Environmental Protection Agency. A major criticism of the SRC-II draft EIS was that it had been written too soon, that not enough design work had been completed to provide adequate information to the public.

However, DOE had to balance the NEPA goal of providing as much information as possible, with the NEPA restriction against prejudicing the final decision by not committing a substantial amount of funds to the project prior to making its decision. To finish final design work for SRC-II would have cost over \$200 million. Such a commitment of funds prior to publication of the final EIS and the Record of Decision could have been viewed as a substantial commitment to the project that could have prejudiced the ultimate decision on whether or not to proceed.

DOE decided to make an approach that is provided for in the CEQ regulations. To avoid the possible claim of prejudicing the final decision, DOE proceeded with the preparation of the SRC EIS's without waiting to complete final designs. DOE used all of the information available, including the conceptual design work, and based its analyses, where necessary, on worst-case estimates of the potential adverse impacts. CEQ specifically authorizes the use of worst-case estimates where sufficient information is not available to perform a proper analysis.<sup>8</sup>

Additionally, DOE agreed to perform supplementary NEPA reviews, as necessary, to address significant environmental impacts that were uncovered after publication of the final EIS and that were not within the scope of the final EIS. This approach was discussed with, and

agreed to by EPA in a meeting held in September 1980. By using the worse-case approach, DOE sought to bracket the potential impacts that could occur. Using this approach tends to overstate the potential impacts, but the decision maker can analyze the potential worse-case consequences of his decision and therefore make a judgment in the absence of having complete information about the project.

Preparation of the SRC EIS's took longer than anyone originally anticipated. After receiving the public criticism on the SR-II draft EIS, the Office of Fossil Energy in DOE established the Fossil Energy Environmental Task Force to organize, schedule, and complete the remaining synfuels EIS's<sup>9</sup> that were being prepared concurrently by DOE. On January 9, 1981, a 700-page draft EIS for SRC-I, was filed with the Environmental Protection Agency. In it, DOE identified the environmental impacts it expected from the construction and operation of the SRC-I demonstration plant in Newman, Kentucky, along with the potential monitoring and mitigation measures available to reduce the effects of the potential impacts. The impacts identified covered not only the adverse impacts in and around the site of the plant, but to the extent practicable, the cumulative effects associated with the construction of the SRC-I plant along with nine other energy facilities in the region. Additionally, in keeping with the mandates of NEPA, DOE also analyzed, to the extent possible, the environmental impacts of a commercial-sized SRC-I plant--five times the size of the demonstration plant--at the Newman site. Alternative sites were also analyzed.

Many environmental impacts were identified in the draft EIS. Among the major potential impacts were occupational and public health effects, surface water quality, socioeconomic impacts, and cumulative impacts. As mentioned above, monitoring plans and mitigation measures were also set forth in the draft EIS. Mitigation measures are required by the CEQ<sup>10</sup> to show what efforts the Federal agency will undertake to reduce the adverse impacts. In the case of SRC-1, much of the time taken during preparation of the document involved developing monitoring and mitigating measures. The occupational and public health concerns related to the demonstration plant received much attention from the public. The area of occupational and public health is one which the Government needs to gather more information on, so that monitoring becomes a crucial factor. As noted in the EIS, "A portion of the monitoring program will focus on early detection of pollutants or contaminants in ambient and work place environments so that adverse effects can be avoided or mitigated. The remainder of the monitoring program will be used to acquire an understanding of environmental and health effects caused by the presence or release of chemical substances from SRC technology for which no legislated standard exists." Specific monitoring and mitigating measures are set forth in the EIS.

In the socioeconomic impact discussion, the EIS reports that traffic jams of up to four hours are possible during the morning peak hours if no mitigating measures are taken. Obviously, this problem received significant attention as DOE examined various alternatives that would reduce the traffic volume to acceptable levels. Analyzing the impacts of the various alternatives and combinations of alternatives to find acceptable solutions was time-consuming, but necessary. The traffic impacts would be quite severe, if not unacceptable, without an effective traffic mitigation plan.

#### Impacts of NEPA - Constraint or Opportunity

The first scoping meeting for the SRC-I EIS was held on July 24, 1979. The final EIS was published in early July 1981, almost two years later. To some, taking two years to write an EIS is too long, and to a degree, those critics are correct. The synfuels program in DOE attempted to prepare five EIS's at the same time, and there is no doubt that this ambitious effort was partly responsible for the amount of time involved. However, a more significant reason for the time-consuming nature of the NEPA process was the fact that DOE was attempting to characterize and analyze first-of-its-kind plants, which means we were writing first-of-its-kind EIS's. We had to take the time necessary to ensure that we were describing the direct liquefaction processes and their environmental impacts as clearly, accurately, and comprehensively as possible.

NEPA is a public process, by definition, and a document such as the SRC-I final EIS--some thirteen hundred pages--was the result of a lot of public interaction with DOE. On the evening of the first hearings held in Kentucky to receive comments on the draft EIS, twelve hundred people were in attendance. We received hundreds of pages of comments, and synthesized them down to approximately five hundred specific comments which we specifically responded to as part of the final EIS. Other Federal agencies participated in the process, along with several departments in the state government. All of this cooperation, coordination, public commenting and continuous evaluation and updating of the available information took time. Time meant delay and delay means potential increases in costs. Long-lead procurement, site preparation and preconstruction activities had to await the conclusion of the NEPA process.

However, despite the time and associated expense involved with the NEPA process, and despite the impatience and lack of enthusiasm of some people even within DOE over the seemingly endless number of reviews and revisions, and despite the many criticisms, both reasonable and unreasonable, that the SRC EIS's received during the NEPA process; I believe that the NEPA process will prove, in the long run, to have played a very valuable and beneficial role in the development of a synthetic fuels industry. The NEPA process has provided a forum for

providing the public with all available information on the potential environmental consequences of demonstrating the direct coal liquefaction technology. The public has had the opportunity to read about the potential air and water emissions from a direct liquefaction plant, to study the volumes of solid waste to be generated, and most important of all, to ask questions about the technology and its environmental impacts and to get a response to those questions from the Government.

The coal liquefaction demonstration plants, whether or not they are ever built, have provided the Government with the opportunity to tell the public, through the NEPA process, what coal liquefaction is all about, and the public has had the opportunity to participate in the analyses concerning the acceptability of synthetic liquids. I believe that this public participation at the birth of an emerging technology approaching commercial-scale will provide a firm foundation for the future development of coal liquefaction. Not every new technology has had the opportunity--and the requirement--of complying with NEPA. In contrast to direct liquefaction, nuclear power was commercialized in the late 1950's with less than complete public participation in the decision-making process. As noted in the book "Energy Future," edited by Robert Stobaugh and Daniel Yergin of the Harvard Business School, a major reason for the persistence of reactor safety criticism was the way light water technology was introduced in this country by industry and Government. The authors cite "a cavalier attitude toward the outside world...During the years of early public visibility...the Government agencies and the business interests with the most to gain from successful innovation, largely monopolized the technical information about it. Their impatience with questions from outside the club surely contributed to their critic's sense that they were hiding something. By impugning the competence or even the rights of outsiders to question their judgment, Government and industry advocates of nuclear power helped to create the impression that much of the 'truth' about atomic energy's dangers was being distorted."11

NEPA did not exist when the first nuclear plants were being planned. The public did not have the opportunity to publicly debate the acceptance of nuclear power. By utilizing the NEPA process, the Government today has the opportunity to bring the public in on the ground floor of the development of direct liquefaction and to establish a bedrock of public confidence upon which industry can build in the future. As the political process gives industry the green light to proceed with synfuels development, the burden of maintaining the confidence of the public by providing a safe work place and environmentally acceptable processes and products will shift to industry.

## Conclusion

NEPA imposes certain procedural burdens on the Federal Government. Government no longer has exclusive control over the decision-making process. Government must share with the public information concerning the potential adverse impacts associated with major and significant Government activities. Nuclear energy, for example, was developed prior to the enactment of NEPA by the Congress. As a result, there was no legal mandate to involve the public in the decision-making process or to share information concerning the environmental issues related to nuclear power with the public. This lack of public participation, at the birth of nuclear energy and the lack of a public debate on the development of nuclear energy, have certainly contributed to the faltering status of nuclear energy in today's energy mix. In order for any new technology to ultimately succeed in the marketplace, the public must have confidence in that technology, and that confidence can only be gained through the full and complete exchange of information by the Government.

NEPA's procedural requirements can be time-consuming and have been viewed by some as a barrier to the speedy development of a new technology. But speed should not be the only criterion by which we judge our governmental actions. In fact, because there are significant technical barriers to the speedy development of new technologies, a properly implemented NEPA review should not become a "critical path" item and should not cause delays to the technology development. It is my belief that NEPA should not be viewed as a constraint to development of direct liquefaction. The final answer as to the acceptability of synthetic fuels in the marketplace, and direct liquefaction in particular, is still several years away. However, the NEPA process has given the public a glimpse, a large glimpse, of direct liquefaction in its infancy, and public understanding and acceptance of the potential environmental consequences at this point in time will make the path to commercialization a less burdensome path to follow.



### References

1. The National Environmental Policy Act of 1969, as amended; PL91-190, 42 U.S.C. 4371 et seq (102(2)(c))
2. 40 CFR Parts 1500-1508
3. 40 CFE 1508.9
4. 40 CFR 1501.7
5. 40 CFR 1501.7
6. The implementation plan is a DOE requirement pursuant to 45 FR 20694 (4A(e)), and is not necessarily required by every Federal agency
7. 40 CFR 1505.2
8. 40 CFR 1502.22(b)
9. The Fossil Energy Environmental Task Force was established in late August 1980 when Martin L. Rogowsky was designated as its Chairman.
10. 40 CFR 1502.14(f)
11. Energy Future, Stobaugh & Yergin, Random House, 1980.