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FPSO Environmental Impact Statement: What is Happening?

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Abstract

This paper explores the regulatory issues around the use of floating production, storage, and offloading systems (FPSOs) and shuttle tankers in the Gulf of Mexico (GOM), the increasing interest in the use of FPSOs in the GOM, and how DeepStar came to be involved in the FPSO Environmental Impact Statement (EIS). It also covers the interaction between DeepStar, the Minerals Management Service (MMS), and the U.S. Coast Guard (USCG), the progress made in selecting a contractor to conduct the EIS, and the schedule for completion of the EIS.

Introduction

The FPSO is a development option in the "tool box" of operators all around the world except in the United States. There are currently 41 FPSOs in operation and another 24 under construction. Between 1995 and the year 2000, the number of FPSOs operating worldwide will triple.[1] FPSOs have proved to be safe and environmentally sound, as well as an economic development option. Many operators would like to add FPSOs to the list of development options available for projects in the deepwater GOM. The MMS and the USCG have agreed to work with operators and begin the necessary technical, safety, and environmental reviews and develop the regulatory framework that might allow FPSOs to operate in the GOM.

One of the first steps in the regulatory process is to evaluate the potential effects of FPSO operations and support activities on the marine, human, and coastal environment. The National Environmental Policy Act (NEPA) requires the preparation of a detailed EIS on any major Federal action that may have a significant impact on the environment. Since FPSO technology and shuttle tankering of GOM-produced crude oil are new to the Gulf and since large volumes of crude oil will be stored in the hull of the FPSO, the MMS has decided to prepare an EIS to assess the potential impacts of FPSO and shuttle tanker operations. DeepStar, an industry consortium composed of 22 oil and gas operators and numerous vendors, has agreed to provide funding to the MMS in support of the EIS.

The intent of the NEPA/EIS process is to inform stakeholders and the public of proposed Federal or Federally permitted actions and the potential impacts of those actions. The EIS process provides multiple opportunities for input by interested parties and the general public. Input on issues and alternatives to be addressed in the EIS is solicited through public scoping, and once the Draft EIS has been completed, public hearings are conducted on its contents and findings. Both formal and informal consultations with other Federal agencies and the affected states are also part of the EIS process. The EIS document is intended to provide information on the alternatives, potential impacts, and possible mitigation measures so that Federal agencies can make informed decisions. The EIS is not a decision document; decisions that are made based upon consideration of the information and findings presented in the EIS are documented in a "Record of Decision."

Increasing Interest in FPSOs in the GOM

In recent years, there has been a surge in deepwater leasing in the Central and Western planning areas of the Outer Continental Shelf (OCS) in the GOM, and operators have spent billions of dollars obtaining these leases. Many of these leases are far from existing infrastructure, and operators face difficult challenges if they are to proceed with developments on these leases. Floating production system development options that have been used in the deepwater GOM in the 1990s, such as large tension leg platforms (TLPs), Spars, and semi-submersibles, may not be the best option on many of these remote leases. Some potential advantages of FPSOs as compared with other development options are faster cycle time, lower construction costs, reusability, and the flexibility to take crude oil directly to the refining center of choice. FPSOs may be the best technical and economic option for

developing deepwater discoveries that are marginal and/or are far from existing infrastructure.

FPSOs and shuttle tankers have been used around the world since the late 1970s. In fact, there are currently more tanker-based floating production systems worldwide than any other type of floating system. The only FPSO to operate in U.S. waters was installed at the western end of the Santa Barbara Channel in 1981. This facility was in operation for 13 years prior to being removed.[2] In 1996, operators and FPSO builders began having serious discussions with the MMS about the possibility of using FPSOs in the GOM. Recognizing the increased interest in FPSOs and shuttle tankers, the MMS and DeepStar co-sponsored an FPSO workshop in April 1997 to identify the technical, safety, and environmental issues and the information needs related to FPSOs.[3]

Although there was a great deal of interest in adding FPSOs to the "tool box" of development options available to operators in the deepwater GOM, no operator was ready to submit a development plan with an FPSO. One of the reasons for the reluctance to propose an FPSO installation was the regulatory uncertainty of how the project would be reviewed by the MMS and the USCG. A key part of the regulatory uncertainty was the level of NEPA review that an FPSO development would have to undergo. If a proposed FPSO development were required to undergo an EIS prior to approval, cycle time, which is a major factor in the economics of deepwater projects, would be significantly increased. An operator faced with the prospect of a multi-year regulatory delay on a proposed FPSO development would, therefore, be forced to move forward with another development option. It became apparent that if FPSOs and shuttle tankers were to become a viable development option in the GOM, the time-consuming regulatory hurdles (particularly the EIS process) would have to be completed, or at least be underway, prior to the time that an operator was ready to select a development concept.

One possible way to overcome the potential multi-year regulatory delay was to move forward with a programmatic EIS that covered a wide range of potential FPSO operations. This EIS could take as long as 2 years to complete, but at the end of the process, one of the most significant regulatory uncertainties around the use of FPSOs and shuttle tankers in the deepwater GOM would be completed. Although the MMS agreed that a programmatic EIS made sense in this case, they did not have the personnel or resources to commit to such a large project. If the EIS was to be undertaken before a GOM operator actually submitted a site-specific FPSO development plan to the MMS, the EIS would have to be funded from sources outside the MMS.

Over the course of several months, there was talk in the industry of individual companies funding the EIS, of several companies joining together to provide the funding, and of groups such as DeepStar funding the EIS. There was also much uncertainty about whether or not the MMS would initiate a broad, generic EIS prior to an operator actually submitting a site-specific FPSO development plan to the MMS. In short, the issue seemed to stagnate during the last half of 1997.

DeepStar and MMS Move Forward

The first breakthrough occurred at a working session of the DeepStar 4100 Regulatory Issues Committee in January 1998 when committee members identified FPSOs and shuttle tankers as an important issue for 1998. It became obvious at subsequent meetings that the various member companies placed different levels of importance on this subject. There were companies who wanted to wait until the MMS published their Deepwater Environmental Assessment (EA) before considering funding for the programmatic EIS. Some companies were in favor of proceeding with the EIS immediately since there was no assurance of when the Deepwater EA would be published or what the findings of the EA would be relative to an FPSO. Still others were opposed to providing DeepStar funding for the EIS and attempted to block the effort. Eventually the consensus of the group was that (1) even after the Deepwater EA was published, at a minimum, an EIS would still be required for large volume storage and shuttling and (2) there was a need to begin the EIS soon if the FPSO was going to be in the development "tool box" of GOM deepwater operators by the year 2000.

The DeepStar effort proceeded in April 1998 with the formation of an EIS Subcommittee charged with developing plans and projecting costs for a generic EIS. DeepStar and the MMS continued working together to address various technical, safety, and environmental issues related to using FPSOs and shuttle tankers in the GOM. DeepStar's EIS Subcommittee participated in the preparation of the MMS technical papers being written to support the Deepwater EA. The technical paper on FPSOs eventually became the basic scenario used in the FPSO Environmental Impact Statement. The resulting Base and Sensitivity Case Configurations for FPSOs in the GOM are shown in Table 1.

As the EIS Subcommittee went forward with its work, there was still some uncertainty about whether or not a majority of the DeepStar operating companies would approve the funding. In June 1998, the MMS sent DeepStar a letter supporting the development of a generic EIS funded by DeepStar. Some of the advantages of a DeepStar-funded EIS mentioned in the letter were: DeepStar's access to an extensive network of vendors (and information) associated with FPSOs, DeepStar's well established interface with the MMS and the USCG, and the fact that a DeepStar-funded EIS could proceed immediately. In July 1998, the EIS funding was approved by a majority of the DeepStar operating companies. DeepStar's objectives in this effort are to:

- Expedite the NEPA review of a wide range of FPSOs and shuttle tankers with the anticipation that this development option will be available to operators for use in most deepwater (>200 meters) areas of the Central and Western GOM after completion of the EIS; and

- Ensure that the technical, safety, and environmental issues involving the use of FPSOs and shuttle tankers in the GOM are addressed with the result being safe and environmentally sound installations in the future.

After the funding was approved, DeepStar formed an EIS Steering Committee. The co-chairpersons of this Steering Committee have been working with the MMS preparing the technical FPSO scenario and assisting in the procurement process. The MMS is responsible for the overall scope and findings of the EIS and has committed the necessary resources to ensure that the EIS meets the requirements of NEPA.

In addition to the DeepStar/MMS interaction, other industry efforts are also contributing to the development of the technical, safety, and environmental background data and information needed for the EIS. Some examples are: the National Research Council/Marine Board's study on "Oil Spill Risks from Tank Vessel Lightering,"[4] U.K. Health and Safety Executive's "Close Proximity Study,"[5] the "Report of NOSAC Subcommittee on Collision Avoidance,"[6] Bechtel's "FPSO JIP,"[7] and several OTC papers.[8]

USCG Involvement

Both the MMS and the USCG have jurisdiction over floating systems and will play key roles in the review and decisions on any proposed FPSO installation. In December 1998, the MMS and USCG entered into a new Memorandum of Understanding (MOU) which details the operational components for which each agency has the lead responsibility.[9] Although the USCG has been actively participating in meetings with the MMS and DeepStar, they have chosen to act only in an advisory role in this EIS. To help focus the EIS and define the allowable technical options, the MMS asked the USCG to clarify its position on several critical regulatory issues. The major points of the Coast Guard response were:

- FPSOs are vessels as defined in 46 USC 2101(45), not facilities;

- Produced crude oil stored on an FPSO is considered cargo as defined in 46 CFR 30.10-5. Therefore, the cargo storage tanks aboard an FPSO are subject to certain tank vessel requirements found in Title 33 CFR Part 157 and OPA 90 double hull regulations;

- Crude oil offloading operations from an FPSO to a shuttle tanker are considered lightering operations, and the regulations found in 33 CFR 156 are applicable. The "lightering prohibited areas" identified in 33 CFR 156.310 apply to FPSO offloading operations;

- All FPSOs, regardless of hull type or draft, must comply with the OPA 90 double hull requirements found in Title 46 USC, Section 3703a;

- Safety zones may be established in accordance with 33 CFR 147.15; and

- Operations and pollution prevention will be regulated under 33 CFR Subchapter N.

Contracting Process

In the 4th quarter of 1998, the MMS initiated the Federal procurement process for selecting a third-party contractor to prepare the EIS. In late October, a pre-solicitation meeting was held to solicit comments on the draft statement of work and answer questions from potential contractors. A notice requesting capability statements from interested companies was published in the *Commerce Business Daily* on December 4, 1998. The capability statements and subsequent technical proposals by qualified contractors are being reviewed by the Technical Proposal Evaluation Committee, which includes two DeepStar representatives in addition to the MMS subject-matter experts. Award of the contract is anticipated by April 1999.

EIS Schedule

The NEPA process and development of the EIS documents (Draft EIS and Final EIS) are anticipated to be completed in eighteen months. The NEPA/EIS process occurs in three phases, and the major steps in this process are shown in Figure 1. Phase one includes public scoping meetings and the preparation of a scoping report. The purpose of these meetings is to solicit public input in determining the issues, alternatives, and mitigation measures to be considered for inclusion in the EIS. Scoping meetings will be held during the 2nd quarter of 1999 in Corpus Christi, Houston, and Beaumont, Texas, and in Lake Charles and New Orleans, Louisiana.

The second phase is development of the Draft EIS and public hearings on the Draft EIS. The Draft EIS will address the issues, alternatives, and mitigation measures that were identified by the MMS and during the public scoping meetings. The Draft EIS will contain appropriate background material, a description of the affected environment, a description of FPSO operations, a discussion of reasonable alternatives, an evaluation of the potential environmental impacts associated with FPSO operations and each alternative, and an evaluation of possible measures to mitigate potential adverse environmental impacts. It is anticipated that the Draft EIS will be published and distributed early in the year 2000.

Publication of the Notice of Availability of the Draft EIS in the *Federal Register* will initiate a 60-day public review and comment period. Four public hearings will be held, one in each of the following communities: Corpus Christi and Houston, Texas, and Lake Charles and New Orleans, Louisiana. The purpose of these hearings is to solicit public comments on the contents, scope, and findings of the Draft EIS.

The final phase of the NEPA/EIS process includes the preparation and publication of the Final EIS. The Final EIS will include a summary of the comments received at the public hearings, copies of all written comments on the Draft EIS, and responses to these comments. Responses include both individual responses to specific comments and revisions to the text of the EIS. The Final EIS is expected to be published and distributed in the 3rd quarter of the year 2000.

Conclusions

As the industry makes discoveries on leases in deeper and more remote areas of the GOM, the need for additional development options such as FPSOs and shuttle tankers becomes critical. The MMS, the USCG, and industry are committed to ensuring that the technical, safety, and environment issues related to the use of FPSOs and shuttle tankers on the OCS in the GOM are identified and addressed with the result being safe and environmentally sound installations in the future. DeepStar has taken the industry lead by providing resources and working with the MMS to conduct the NEPA process and prepare an Environmental Impact Statement for FPSOs and shuttle tankers in the GOM. The industry expects to be able to meet all requirements and to safely utilize FPSOs and shuttle tankers in the GOM, just as has been done in other areas around the world.

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