

RESTORE Council Proposal Document

General Information

Proposal Sponsor: U.S. Department of the Interior (DOI)

Title:

Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico

Project Abstract:

The U.S. Department of the Interior (DOI), through the Bureau of Safety and Environmental Enforcement (BSEE), is requesting \$30,453,415, in Council-Selected Restoration Component funding for the proposed Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico project. This would include implementation funds as an FPL Category 2 priority for potential funding. Requested funds represent the total project cost of \$45,230,415 minus the \$14,777,000 of leveraged funding from the DOI. The project will support the primary RESTORE Comprehensive Plan goal to restore and conserve habitat through activities to decommission orphaned facilities offshore in the Matagorda Island, High Island, West Delta, and South Timbalier areas of the Gulf of Mexico.

This large-scale project is projected to substantially contribute to protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast. This project would result in the decommissioning of offshore orphaned oil and gas facilities that are unsafe, unusable, and pose public safety issues. This project would eliminate safety and environmental hazards and improve recreational benefits throughout a large geographic region of the Gulf of Mexico and coastal waters. Project duration is 2 years.

FPL Category: Cat2: Implementation Only

Activity Type: Project

Program: N/A

Co-sponsoring Agency(ies): N/A

Is this a construction project?: Yes

RESTORE Act Priority Criteria:

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

Priority Criteria Justification:

This is a Large-scale project that is projected to substantially contribute to protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem. This project would result in the decommissioning of offshore orphaned oil and gas facilities that are unsafe, unusable, and pose public safety issues. This project would eliminate safety and environmental hazards and improve recreational benefits throughout a large geographic region of the Gulf of Mexico and coastal waters. The risks posed to the ecosystem of not performing this decommissioning will increase with time, due to continued deterioration, as does the cost to address them. Should the structures be reefed (in place or nearby), the project would yield even greater habitat restoration/creation at such locations.

Project Duration (in years): 2

Goals

Primary Comprehensive Plan Goal:

Restore and Conserve Habitat

Primary Comprehensive Plan Objective:

Restore , Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:

N/A

Secondary Comprehensive Plan Goals:

N/A

PF Restoration Technique(s):

Protect and conserve coastal, estuarine, and riparian habitats: Decommission unused, orphaned energy facilities

Location

Location:

Western and Central Gulf of Mexico, specifically the Matagorda Island and High Island areas of the Western Gulf of Mexico and the West Delta and South Timbalier areas of the Central Gulf of Mexico. (See Figure 1)

HUC8 Watershed(s):

Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(East San Antonio Bay)

Texas-Gulf Region(Central Texas Coastal) - Central Texas Coastal(Aransas Bay)

Lower Mississippi Region(Lower Mississippi) - Lower Mississippi-New Orleans(Lower Mississippi-New Orleans)

Lower Mississippi Region(Lower Mississippi) - Central Louisiana Coastal(West Central Louisiana Coastal)

State(s):

Texas

Louisiana

County/Parish(es):

LA - Lafourche

LA - Plaquemines

LA - Terrebonne

TX - Aransas

TX - Calhoun

Congressional District(s):

LA - 1

TX - 27

Narratives

Introduction and Overview:

DOI and Bureau of Safety and Environmental Enforcement (BSEE) is proposing to decommission orphaned energy facilities in the Matagorda Island, High Island, West Delta, and South Timbalier areas of the Gulf of Mexico.

An orphaned energy facility is one in which the lessee or holder has defaulted on its obligation to decommission and for which sole liability rests on the defaulting lessee or holder, which is often bankrupt, liquidated, and/or unreachable. That is, no viable co-lessee or prior lessee/holder is jointly or severally liable for the decommissioning.

The proposed activity is to decommission these offshore orphaned energy facilities that potentially threaten state waters, coastlines, and habitat. These facilities contain hydrocarbons and lack operable navigational aids (e.g., lights and foghorns); they pose a threat of collision, explosion, or toppling (due to hurricanes or other severe conditions) (<https://www.bsee.gov/faqs/what-is-the-idle-iron-policy-and-why-does-it-exist>). Oil and gas structures have been known to provide habitat for fisheries in these areas (<https://www.bsee.gov/what-we-do/environmental-focuses/rigs-to-reefs#5>); but, in their current condition, these orphaned energy facilities pose a significant risk.

By not plugging orphaned energy wells, removing energy equipment, or clearing their associated sites: (1) the health and safety risk to the public will continue as fishermen and recreational boaters could be attracted to orphaned oil and gas facilities, and visitors could come into contact with corroding, unstable structures, open pits, and contaminating substances; (2) natural habitats, processes, and resources will continue to be negatively affected due to the removal of available habitat, altered functions and processes, and continued environmental risk from deteriorated equipment or contamination; and (3) the risks to public health and safety and the environment will continue to increase with time, as will the cost to address them.

BSEE has decommissioning requirements (30 CFR § 250 Subpart Q). BSEE will advertise for and award a contract to decommission the facility(ies). The planning for the performance of the decommissioning will be laid out by the contractor in its application and subsequently spelled out in the contract as awarded. Potential decommissioning contractors will bid and provide a decommissioning schedule (e.g., permitting, mobilization, well plugging, pipeline decommissioning, structure removal, site clearing, and demobilization) and a decommissioning plan (e.g., equipment, procedures, or resources that may be used). The terms of the contract will be determined by and the decommissioning contract awarded by BSEE.

Proposed Methods:

BSEE shall obtain contractor support to decommission orphaned facilities [i.e., plug and abandon orphaned wells (cut 15 feet below mudline); remove orphaned structures; flush, fill, and remove or bury orphaned pipelines; and clear sites of debris]. Decommissioning means returning the energy facility to a condition that meets the requirements of BSEE and other agencies that have jurisdiction over certain decommissioning activities [30 CFR §250.1700(a)(2)]. Decommissioning methodology shall be in accordance with 30 CFR § 250 Subpart Q - Decommissioning Activities, Subpart D - Oil and Gas Drilling, and Subpart J - Pipelines and Pipeline Rights-of-Way, which prescribe BSEE's requirements for properly decommissioning structures, wells, and pipeline segments. The contractor shall identify and obtain all requisite permits, agreements, authorizations, and notices. The contract shall specify deliverables, quantities, delivery location, and delivery schedules.

Environmental Benefits:

On the Federal Outer Continental Shelf (OCS), proper decommissioning of orphaned facilities would

have a beneficial impact on the environment [i.e., plugging and abandoning orphaned wells (cut 15 feet below mudline); removing orphaned structures; flushing, filling, and removing or burying orphaned pipelines; and clearing sites of debris (30 CFR 250 Subpart Q)]. It would reduce the risk of polluting the environment and reduce safety hazards due to potential collisions, explosions, or fires. Unplugged or poorly plugged wells are an environmental hazard, as they provide potential conduits for fluids to migrate between formations and potentially into OCS and State waters (Ho et al. 2016). Poorly plugged wells may also provide pathways for natural gas to seep to the surface and potentially cause fires or other health hazards (Dansby 2014). An orphaned well's potential for causing a potential hazard is largely dependent on the original use of the well (Ho et al. 2016). Oil wells that were in operation for years will typically be lower pressure and have a lower risk of contamination, while a gas well that last flowed at a non-economical rate could still possess enough pressure to be a risk to the environment. Hurricane forces toppling structures and wells in the OCS pose risks to unplugged wells (<https://www.bsee.gov/faqs/what-is-the-idle-iron-policy-and-why-does-it-exist>). Although the wells are equipped with downhole safety valves, leakage from these wells can occur (Siebenaler 2015). This is especially true for orphaned wells where the downhole valves are not routinely tested and verified.

The proper decommissioning of orphaned platforms and pipelines would include removing orphaned structures and flushing, filling, and removing or burying orphaned pipeline segments. This would reduce the risk of spills to the environment from the hydrocarbon inventory in platform vessels and tanks and in pipelines. Without decommissioning, these facilities are at risk of being toppled during hurricanes or other storm events. If that occurs, a large volume of hydrocarbons could be released from vessels, tanks, and pipelines. A similar threat could be a cargo or tanker vessel striking the facility and toppling the facility with similar results. Currently, operable navigational aids are not maintained, since the facilities are orphaned, although the United States Coast Guard (USCG) has issued Notices to Mariners to avoid these locations. Personal injury is also a concern if commercial or recreational vessels strike one of these facilities. Decommissioning (when completed) would eliminate these risks.

The proper plugging of wells provides a great environmental benefit by protecting the environment from potential contamination from oil and gas. Properly plugged wells prevent the movement of fluids between formations, which reduces the chance of oil or gas getting into a formation that could be connected to the seafloor through natural faults. Well plugging techniques differ, depending on the type of well drilled and the actual well conditions (Vrålstad et al. 2019). However, well plugging operations generally consist of removing the tubing, packer, and other completion equipment; pumping cement across producing zones; and placing cement plugs at various depths. A cement plug is set at the surface to cap the well, and wellhead equipment is cut off.

Based on the location of the orphaned platforms, pipelines, and wells, there could be a threat of direct impact to the coastal environment, especially fishery impacts. One orphaned facility is nearly adjacent to the Flower Garden Banks National Marine Sanctuary, which, if impacted, would additionally result in an indirect negative impact to the coastal environment.

Metrics:

Metric Title: HC005 : Decommissioning energy facilities - Number of wells plugged

Target: 38

Narrative: The orphaned facility at West Delta Area Block 117 requires the decommissioning of four wells, three pipelines, and one structure, as well as site clearance. The orphaned facility at South Timbalier Area Block 30 requires the decommissioning of one pipeline and one structure, as well as site clearance. The orphaned facility at Matagorda Island Area Blocks 632/656/657 requires the decommissioning of nine wells, seven pipelines, and seven

structures, as well as site clearance. The orphaned facility at High Island Area Block A 589 requires the decommissioning of two wells, two pipelines, and one structure, as well as site clearance. The evaluation of the project's success over time will be based on the wells, structures, and pipelines that are successfully decommissioned. The project's goal and target is complete decommissioning for all listed sites. (See budget section).

Risk and Uncertainties:

- Delay in or not decommissioning these facilities is the biggest risk. By not flushing, filling, and removing or burying pipeline infrastructure, the risk of leaking pipelines will continue or worsen.
- Operational risks, such as delays or damage due to severe weather (including hurricanes), incidental releases of hydrocarbons, or unexpected well problems will be addressed by the decommissioning contractor, through coordination with and oversight by BSEE and/or USCG.
- Other unlikely risks during decommissioning could include a contractor's inability to complete its decommissioning or a portion of the facility breaking away and causing damage elsewhere, due to storms or hurricanes.

BSEE has considered some of these factors with the following provisions:

- Federal contractors are dissuaded from unduly walking away from obligations under a Federal contract, to avoid Federal actions prohibiting future Federal contracting.
- BSEE's regulatory oversight of offshore oil and gas operators and activities includes preparations for hurricanes, tropical storms, and severe weather, and reporting requirements, should such weather events move through an area of the OCS (<https://www.bsee.gov/resources-tools/hurricane/regulations>). These requirements are promulgated in the Code of Federal Regulations, and additional guidelines are made available through Notices to Lessees.
- Contingency actions and reporting requirements for incidents involving pollution or navigational risks will be coordinated with and through USCG (or EPA, depending on jurisdiction at the point of discharge/release).
- BSEE oversees oil spill planning and preparedness for oil and gas facilities on the OCS.
- All functions related to BSEE authorities in oil spill planning and preparedness are administered by the Oil Spill Preparedness Division. Its primary functions include reviewing and approving oil spill response plans, inspecting oil spill response equipment and resources, providing subject matter expertise during responses to offshore oil spills, and coordinating with USCG.
- Hazardous operations under this project will be subject to the same reviews and requirements as other regularly occurring hazardous operations on the OCS.

Monitoring and Adaptive Management:

BSEE will ensure that decommissioning is performed in a timely and safe manner and will review submitted evidence to determine when the decommissioning is complete. The decommissioning contractor will perform daily navigational aid and pollution inspections.

- BSEE will conduct regularly occurring inspections and other inspections, as needed. BSEE has vast experience regulating decommissioning activities across the OCS; performing decommissioning activities is not within BSEE's purview.
- Outside of BSEE inspections and regulatory oversight, the contractor is responsible for assuring project management.
- A technical liaison is not required, as BSEE District and Regional personnel will communicate directly with and receive communication directly from the contractor, as is normal course of business with any other operator on the OCS.

It is not standard operating procedure to monitor completely decommissioned facilities, once the contractor completes decommissioning operations and demobilizes. However, BSEE will require an end of operations report from the contractor and will act, as may the USCG, upon subsequent reporting of signs of potentially incomplete or improper decommissioning.

Data Management:

BSEE has compiled well, structure, and pipeline data. The public will have access to the data via the BSEE website (<https://www.data.bsee.gov/>). Contract support will collect and provide additional data, as needed, which will be made available to BSEE and stored in a database, some of which will also be publicly available.

Collaboration:

BSEE will collaborate and partner with the Bureau of Ocean Energy Management (BOEM) to advance the proposed project and potentially collaborate and partner with Texas, Louisiana, or other Gulf States, should structures be reefed (in place or nearby).

Public Engagement, Outreach, and Education:

N/A

Leveraging:

Funds: \$14,777,000.00

Type: Bldg on Others

Status: Received

Source Type: Other Federal

Description: BSEE and BOEM resources are available to implement these projects and ensure that the project meets the planned objectives. These resources include expertise (e.g., acquisition, procurement, contracting, and engineering) and data (well, structure, and pipeline data). Additionally, experience coordinating with state agencies will help accomplish some or all the actions identified in this project. DOI possesses approximately \$14,777,000 in funding available for this project. Also, a State may accept structures into its reefing program, resulting in a cost saving.

Environmental Compliance:

BOEM prepared a Programmatic Environmental Assessment (PEA) for Decommissioning Activities on the Gulf of Mexico Outer Continental Shelf. This PEA addresses the National Environmental Policy Act (NEPA), OCS Lands Act (OCSLA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This PEA may be found at <https://www.boem.gov/sites/default/files/boemnewsroom/Library/Publications/2005/2005-013.pdf>. BSEE relies on this PEA for decommissioning activities, which fully covers the proposed project and applicable laws. There may be instances where additional or supplemental environmental compliance documentation is needed; such documentation will be included in association with a federal permit process.

The following are some of the relevant permits that may require NEPA analysis:

Permit Type	Regulation Citation
Permit to Modify (APM)	30 CFR §250.465 and 30 CFR §250.1704(g)
Permit for Pipeline Installation/Modification	30 CFR §250.1000(b)(1) and (2)
Permit for Structure Removal	30 CFR §250.1704(a) and (b)

DOI is preparing the environmental compliance documentation needed to move the implementation component of this proposed activity into FPL Category 1. DOI will provide this documentation, as needed, prior to publication of the draft FPL and will revise the proposal accordingly.

Bibliography:

“BSEE Data Center.” Bureau of Safety and Environmental Enforcement. Accessed Apr. 2020. <https://www.data.bsee.gov/>.

Code of Federal Regulations Title 30 Part 250 Subpart Q - Decommissioning Activities. Revised Jul. 2019.

Code of Federal Regulations Title 30 Part 250 Subpart D - Oil and Gas Drilling Operations. Revised Jul. 2019.

Code of Federal Regulations Title 30 Part 250 Subpart J - Pipelines and Pipeline Rights-of-Way. Revised Jul. 2019.

Dansby, Linda. 2014. “Gulf Coast Ecosystem Restoration Project Proposal: Abandoned Oil and Gas Well Plugging and Site Reclamation.” Gulf Coast Ecosystem Restoration Council. www.restorethegulf.gov/sites/default/files/Abandoned%20Oil%20and%20Gas%20Well%20Plugging%20and%20Site%20Reclamation.pdf.

Ho, Jacqueline, et al. 2016. “Plugging the Gaps in Inactive Well Policy.” Resources For the Future. media.rff.org/archive/files/document/file/RFF-Rpt-PluggingInactiveWells.pdf.

“Hurricane Season Information / Regulations.” Bureau of Safety and Environmental Enforcement. Accessed Jun. 2020. <https://www.bsee.gov/resources-tools/hurricane/regulations>.

“Rigs to Reefs.” Bureau of Safety and Environmental Enforcement. Accessed Apr. 2020. <https://www.bsee.gov/what-we-do/environmental-focuses/rigs-to-reefs#5>.

Siebenaler, Shane. 2015. “Drill Pipe and Tubing Safety Valve Evaluation.” Bureau of Safety and Environmental Enforcement. <https://www.bsee.gov/sites/bsee.gov/files/tap-technical-assessment-program//731aa.pdf>.

Vrålstad, Torbjørn, et al. 2019. “Plug & abandonment of offshore wells: Ensuring long-term well integrity and cost-efficiency.” ScienceDirect. www.sciencedirect.com/science/article/pii/S0920410518309173#bib105.

“What is the “idle iron” policy and why does it exist?” Bureau of Safety and Environmental Enforcement. Accessed Apr. 2020. <https://www.bsee.gov/faqs/what-is-the-idle-iron-policy-and-why-does-it-exist>.

Budget

Project Budget Narrative:

The project funding requested is \$30,453,415, which is the total project cost of \$45,230,415 minus the \$14,777,000 of leveraged funding from BOEM. Of the project funding requested, it is estimated that approximately \$1,522,671 will go towards Planning; approximately \$25,885,403 will go towards Implementation; approximately \$1,522,671 will go towards Monitoring; and approximately \$1,522,671 will go towards Project Contingency. Project management will be provided through leveraging

- BSEE appropriated funding (e.g., salaries of BSEE Inspectors and other personnel who regularly oversee and regulate decommissioning operations) and
- through the contractor's own management of the project.

This is a performance, not data seeking, project; as such, the contractor will manage the data it collects and, as necessary, rely on existing data that was provided by BSEE appropriated funding. There will be no agency overhead.

Total FPL 3 Project/Program Budget Request:

\$ 30,453,415.00

Estimated Percent Monitoring and Adaptive Management: 5 %

Estimated Percent Planning: 5 %

Estimated Percent Implementation: 85 %

Estimated Percent Project Management: 0 %

Estimated Percent Data Management: 0 %

Estimated Percent Contingency: 5 %

Is the Project Scalable?:

Yes

If yes, provide a short description regarding scalability:

Project could be scaled down for the decommissioning of orphaned facilities in one or more of the four areas of the Gulf of Mexico. For example, the project could be scaled to only include the Matagorda Island area.

Environmental Compliance¹

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g., title and date of document, permit number, weblink etc.)
National Environmental Policy Act	Yes	BOEM prepared a Programmatic Environmental Assessment (PEA) for Decommissioning Activities on the Gulf of Mexico Outer Continental Shelf. This PEA addresses the National Environmental Policy Act (NEPA), OCS Lands Act (OCSLA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This PEA can be found at https://www.boem.gov/sites/default/files/boemnewsroom/Library/Publications/2005/2005-013.pdf . See Environmental Compliance Section text.
Endangered Species Act	Yes	BOEM prepared a Programmatic Environmental Assessment (PEA) for Decommissioning Activities on the Gulf of Mexico Outer Continental Shelf. This PEA addresses the National Environmental Policy Act (NEPA), OCS Lands Act (OCSLA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This PEA can be found at https://www.boem.gov/sites/default/files/boemnewsroom/Library/Publications/2005/2005-013.pdf . See Environmental Compliance Section text.
National Historic Preservation Act	N/A	Note not provided.
Magnuson-Stevens Act	N/A	Note not provided.
Fish and Wildlife Conservation Act	N/A	Note not provided.
Coastal Zone Management Act	N/A	Note not provided.
Coastal Barrier Resources Act	N/A	Note not provided.
Farmland Protection Policy Act	N/A	Note not provided.
Clean Water Act (Section 404)	N/A	Note not provided.
River and Harbors Act (Section 10)	N/A	Note not provided.
Marine Protection, Research and Sanctuaries Act	Yes	BOEM prepared a Programmatic Environmental Assessment (PEA) for Decommissioning Activities on the Gulf of

¹Environmental Compliance documents available by request (restorecouncil@restorethegulf.gov).

		Mexico Outer Continental Shelf. This PEA addresses the National Environmental Policy Act (NEPA), OCS Lands Act (OCSLA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This PEA can be found at https://www.boem.gov/sites/default/files/boemnewsroom/Library/Publications/2005/2005-013.pdf . See Environmental Compliance Section text.
Marine Mammal Protection Act	Yes	BOEM prepared a Programmatic Environmental Assessment (PEA) for Decommissioning Activities on the Gulf of Mexico Outer Continental Shelf. This PEA addresses the National Environmental Policy Act (NEPA), OCS Lands Act (OCSLA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This PEA can be found at https://www.boem.gov/sites/default/files/boemnewsroom/Library/Publications/2005/2005-013.pdf . See Environmental Compliance Section text.
National Marine Sanctuaries Act	N/A	Note not provided.
Migratory Bird Treaty Act	N/A	Note not provided.
Bald and Golden Eagle Protection Act	N/A	Note not provided.
Clean Air Act	N/A	Note not provided.
Other Applicable Environmental Compliance Laws or Regulations	N/A	Note not provided.

Maps, Charts, Figures

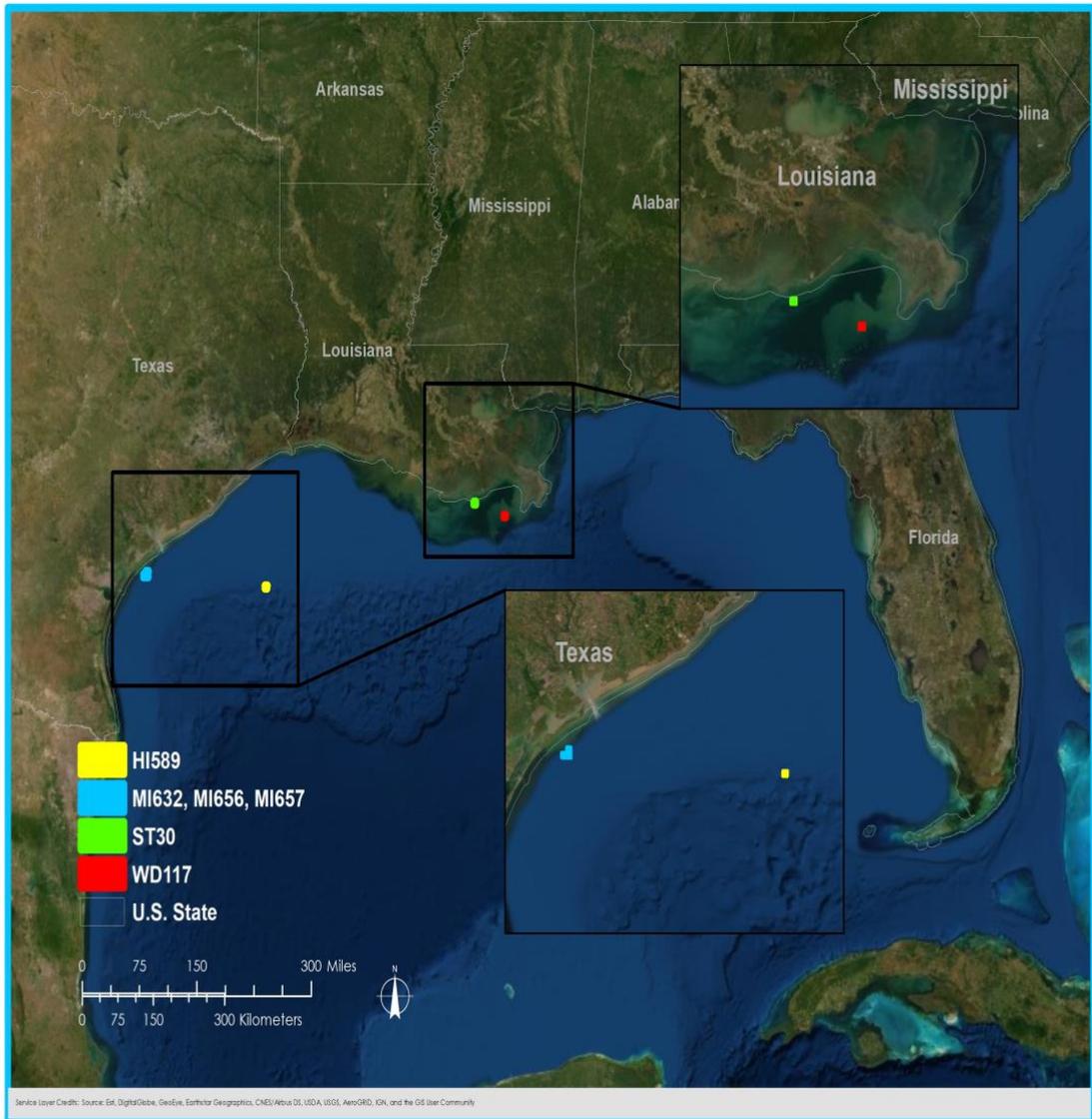


Figure 1: Location of offshore orphaned energy facility sites.

RESTORE Council FPL 3 Proposal Document

General Information

Proposal Sponsor:

U.S. Department of the Interior – Bureau of Safety and Environmental Enforcement

Title:

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Project Abstract:

DOI/BSEE is proposing to decommission orphaned facilities offshore in the Matagorda Island, High Island, West Delta, and South Timbalier areas of the Gulf of Mexico.

FPL Category: Cat2: Implementation Only

Activity Type: Project

Program: N/A

Co-sponsoring Agency(ies): N/A

Is this a construction project?

Yes

RESTORE Act Priority Criteria:

(II) Large-scale projects and programs that are projected to substantially contribute to restoring and protecting the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast ecosystem.

Priority Criteria Justification:

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Project Duration (in years): 2

Goals

Primary Comprehensive Plan Goal:
Restore and Conserve Habitat

Primary Comprehensive Plan Objective:
Restore, Enhance, and Protect Habitats

Secondary Comprehensive Plan Objectives:
N/A

Secondary Comprehensive Plan Goals:
N/A

PF Restoration Technique(s):
Protect and conserve coastal, estuarine, and riparian habitats: Decommission unused, orphaned energy facilities

Location

Location:
Western and Central Gulf of Mexico, specifically the Matagorda Island and High Island areas of the Western Gulf of Mexico and the West Delta and South Timbalier areas of the Central Gulf of Mexico. (See Figure 1)

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Narratives

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Proposed Methods:

Obtain contractor support to decommission orphaned facilities [i.e., plug and abandon orphaned wells (cut 15 feet below mudline); remove orphaned structures; flush, fill, and remove or bury orphaned pipelines; and clear sites of debris]. Decommissioning means returning the energy facility to a condition that meets the requirements of BSEE and other agencies that have jurisdiction over certain decommissioning activities [30 CFR §250.1700(a)(2)]. The Contractor shall identify and obtain all requisite permits, agreements, authorizations, and notices. The contract shall specify deliverables, quantities, delivery location, and delivery schedules.

Environmental Benefits:

On the Federal Outer Continental Shelf (OCS), proper decommissioning of orphaned facilities would have a beneficial impact on the environment [i.e., plugging and abandoning orphaned wells (cut 15 feet below mudline); removing orphaned structures; flushing, filling, and removing or burying orphaned pipelines; and clearing sites of debris (30 CFR 250 Subpart Q)]. It would reduce the risk of

polluting the environment and reduce safety hazards due to potential collisions, explosions, or fires. Unplugged or poorly plugged wells are an environmental hazard, as they provide potential conduits for fluids to migrate between formations and potentially into OCS and State waters (Ho et al. 2016). Poorly plugged wells may also provide pathways for natural gas to seep to the surface and potentially cause fires or other health hazards (Dansby 2014). An orphaned well's potential for causing a potential hazard is largely dependent on the original use of the well (Ho et al. 2016). Oil wells that were in operation for years will typically be lower pressure and have a lower risk of contamination, while a gas well that last flowed at a non-economical rate could still possess enough pressure to be a risk to the environment. Hurricane forces toppling structures and wells in the OCS pose risks to unplugged wells (<https://www.bsee.gov/faqs/what-is-the-idle-iron-policy-and-why-does-it-exist>). Although the wells are equipped with downhole safety valves, leakage from these wells can occur (Siebenaler 2015). This is especially true for orphaned wells where the downhole valves are not routinely tested and verified.

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The proper plugging of wells provides a great environmental benefit by protecting the environment from potential contamination from oil and gas. Properly plugged wells prevent the movement of fluids between formations, which reduces the chance of oil or gas getting into a formation that could be connected to the seafloor through natural faults. Well plugging techniques differ, depending on the type of well drilled and the actual well conditions (Vrålstad et al. 2019). However, well plugging operations generally consist of removing the tubing, packer, and other completion equipment; pumping cement across producing zones; and placing cement plugs at various depths. A cement plug is set at the surface to cap the well, and wellhead equipment is cut off.

Based on the location of the orphaned platforms, pipelines, and wells, there could be a threat of direct impact to the coastal environment, especially fishery impacts. One orphaned facility is nearly adjacent to the Flower Garden Banks, which, if impacted, would additionally result in an indirect negative impact to the coastal environment.

Metrics:

Metric Title: HC005: Decommissioning energy facilities - Number of wells plugged and orphan structures removed

Target: 38

Narrative: The orphaned facility at West Delta Area Block 117 requires the decommissioning of four wells, three pipelines, and one structure, as well as site clearance. The orphaned facility at South Timbalier Area Block 30 requires the decommissioning of one pipeline and one structure, as well as site clearance. The orphaned facility at Matagorda Island Area Blocks 632/656/657 requires the decommissioning of nine wells, seven pipelines, and seven structures, as well as site clearance. The orphaned facility at High Island Area Block A 589 requires the decommissioning of two wells, two pipelines, and one structure, as well as site clearance. The evaluation of the project's success over time will be based on the wells, structures, and pipelines that are successfully decommissioned.

Risk and Uncertainties:

Delay in or not decommissioning these facilities is the biggest risk. By not flushing, filling, and removing or burying pipeline infrastructure, the risk of leaking pipelines will continue or worsen. Operational risks, such as delays or damage due to severe weather (including hurricanes), incidental releases of hydrocarbons, or unexpected well problems will be addressed by the decommissioning contractor, through coordination with and oversight by BSEE and/or USCG. Other unlikely risks during decommissioning could include a contractor's inability to complete its decommissioning or a portion of the facility breaking away and causing damage elsewhere during storms or hurricanes.

Monitoring and Adaptive Management:

BSEE will ensure that decommissioning is performed in a timely and safe manner and will review submitted evidence to determine when the decommissioning is complete. The decommissioning contractor will perform daily navigational aid and pollution inspections. BSEE will conduct regularly occurring inspections and inspections, as needed.

Data Management:

BSEE has compiled well, structure, and pipeline data. The public will have access to the data via the BSEE website (<https://www.data.bsee.gov/>). Contract support will collect and provide additional data, as needed, which will be made available to BSEE and stored in a database, some of which will also be publicly available.

Collaboration:

BSEE will collaborate and partner with the Bureau of Ocean Energy Management (BOEM) to advance the proposed project and potentially collaborate and partner with Texas, Louisiana, or other Gulf States, should structures be reefed (in place or nearby).

Public Engagement, Outreach, and Education:

N/A

Leveraging:

Funds: \$14,777,000.00

Type: Building on Others

Status: Received

Source Type: Other Federal

Description: BSEE and BOEM resources are available to implement these projects and ensure that the project meets the planned objectives. These resources include expertise (e.g., acquisition, procurement, contracting, and engineering) and data (well, structure, and pipeline data).

Additionally, experience coordinating with state agencies will help accomplish some or all the actions identified in this project. BOEM possesses approximately \$14,777,000 in funding available for this project. Also, a State may accept structures into its reefing program, resulting in a cost saving.

Environmental Compliance:

BOEM prepared a Programmatic Environmental Assessment (PEA) for Decommissioning Activities on the Gulf of Mexico Outer Continental Shelf. This PEA addresses the National Environmental Policy Act (NEPA), OCS Lands Act (OCSLA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). This PEA can be found at

<https://www.boem.gov/sites/default/files/boemnewsroom/Library/Publications/2005/2005-013.pdf>. BSEE relies on this PEA for decommissioning activities, which fully covers the proposed project and applicable laws. There may be instances where additional or supplemental environmental compliance documentation is needed; such documentation will be included in association with a federal permit process.

The following are some of the relevant permits that may require NEPA analysis:

<u>Permit Type</u>	<u>Regulation Citation</u>
<i>Permit to Modify (APM)</i>	<i>30 CFR §250.465 and 30 CFR §250.1704(g)</i>
<i>Permit for Pipeline Installation/Modification</i>	<i>30 CFR §250.1000(b)(1) and (2)</i>
<i>Permit for Structure Removal</i>	<i>30 CFR §250.1704(a) and (b)</i>

DOI is preparing the environmental compliance documentation needed to move the implementation component of this proposed activity into FPL Category 1. DOI will provide this documentation, as needed, prior to publication of the draft FPL and will revise the proposal accordingly.

Bibliography:

“BSEE Data Center.” Bureau of Safety and Environmental Enforcement. Accessed Apr. 2020.
<https://www.data.bsee.gov/>.

Code of Federal Regulations Title 30 Part 250 Subpart Q - Decommissioning Activities. Revised Jul. 2019.

Code of Federal Regulations Title 30 Part 250 Subpart D - Oil and Gas Drilling Operations. Revised Jul. 2019.

Code of Federal Regulations Title 30 Part 250 Subpart J - Pipelines and Pipeline Rights-of-Way. Revised Jul. 2019.

Dansby, Linda. 2014. “Gulf Coast Ecosystem Restoration Project Proposal: Abandoned Oil and Gas Well Plugging and Site Reclamation.” Gulf Coast Ecosystem Restoration Council.
www.restorethegulf.gov/sites/default/files/Abandoned%20Oil%20and%20Gas%20Well%20Plugging%20and%20Site%20Reclamation.pdf.

Ho, Jacqueline, et al. 2016. “Plugging the Gaps in Inactive Well Policy.” Resources For the Future.
media.rff.org/archive/files/document/file/RFF-Rpt-PluggingInactiveWells.pdf.

“Rigs to Reefs.” Bureau of Safety and Environmental Enforcement. Accessed Apr. 2020.
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Siebenaler, Shane. 2015. “Drill Pipe and Tubing Safety Valve Evaluation.” Bureau of Safety and Environmental Enforcement. <https://www.bsee.gov/sites/bsee.gov/files/tap-technical-assessment-program//731aa.pdf>.

Vrålstad, Torbjørn, et al. 2019. “Plug & abandonment of offshore wells: Ensuring long-term well integrity and cost-efficiency.” ScienceDirect.
www.sciencedirect.com/science/article/pii/S0920410518309173#bib105.

“What is the “idle iron” policy and why does it exist?” Bureau of Safety and Environmental Enforcement. Accessed Apr. 2020. <https://www.bsee.gov/faqs/what-is-the-idle-iron-policy-and-why-does-it-exist>.

Budget

Project Budget Narrative:

The project funding requested is \$30,453,415, which is the total project cost of \$45,230,415 minus the \$14,777,000 of leveraged funding from BOEM. Of the project funding requested, it is estimated that approximately \$1,522,671 will go towards Planning; approximately \$25,885,403 will go towards Implementation; approximately \$1,522,671 will go towards Monitoring and Adaptive Management; and approximately \$1,522,671 will go towards Project Contingency.

Total FPL 3 Project/Program Budget Request:

\$ 30,453,415.00

Estimated Percent Monitoring and Adaptive Management: 5 %

Estimated Percent Planning: 5 %

Estimated Percent Implementation: 85 %

Estimated Percent Project Management: 0 %

Estimated Percent Data Management: 0 %

Estimated Percent Contingency: 5 %

Is the Project Scalable?

Yes

If yes, provide a short description regarding scalability:

Project could be scaled down for the decommissioning of orphaned facilities in one or more of the four areas of the Gulf of Mexico. For example, the project could be scaled to only include the Matagorda Island area.

Environmental Compliance¹

Environmental Requirement	Has the Requirement Been Addressed?	Compliance Notes (e.g., title and date of document, permit number, weblink etc.)
National Environmental Policy Act	N/A	Note not provided.
Endangered Species Act	N/A	Note not provided.
National Historic Preservation Act	N/A	Note not provided.
Magnuson-Stevens Act	N/A	Note not provided.
Fish and Wildlife Conservation Act	N/A	Note not provided.
Coastal Zone Management Act	N/A	Note not provided.
Coastal Barrier Resources Act	N/A	Note not provided.
Farmland Protection Policy Act	N/A	Note not provided.
Clean Water Act (Section 404)	N/A	Note not provided.
River and Harbors Act (Section 10)	N/A	Note not provided.
Marine Protection, Research and Sanctuaries Act	N/A	Note not provided.
Marine Mammal Protection Act	N/A	Note not provided.
National Marine Sanctuaries Act	N/A	Note not provided.
Migratory Bird Treaty Act	N/A	Note not provided.
Bald and Golden Eagle Protection Act	N/A	Note not provided.
Clean Air Act	N/A	Note not provided.
Other Applicable Environmental Compliance Laws or Regulations	N/A	Note not provided.

¹ Environmental Compliance document uploads available by request (restorecouncil@restorethegulf.gov).

Maps, Charts, Figures

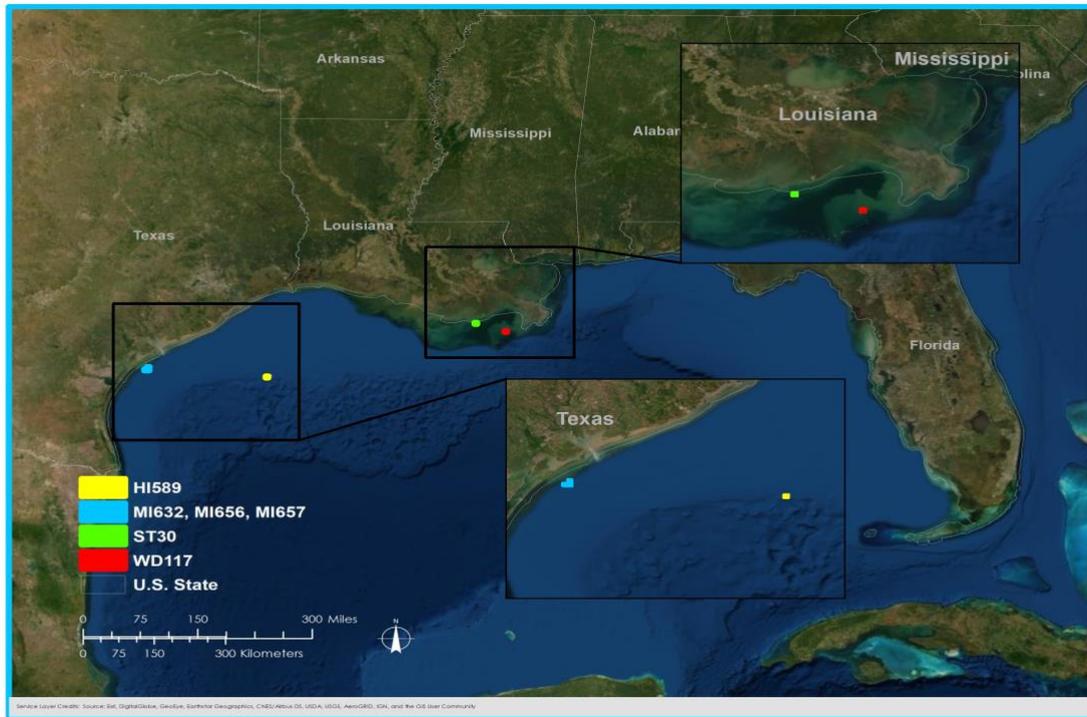


Figure 1. Location of offshore orphaned energy facility sites.

FPL 3b Internal Staff Review of Proposal Submitted 4/24/2020

Project/Program	Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico (DOI/BSEE)		
Primary Reviewer	Jean Cowan	Sponsor	DOI
EC Reviewer	John Ettinger	Co-Sponsor	
1. Is/Are the selected Priority Criteria supported by information in the proposal?			Yes
Notes			
2. Does the proposal meet the RESTORE Act geographic eligibility requirement?			Yes
Notes			
3. Are the Comprehensive Plan primary goal and primary objective supported by information in the proposal?			Yes
Notes			
4. Planning Framework: If the proposal is designed to align with the Planning Framework, does the proposal support the selected priority approaches, priority techniques, and/or geographic area?			Yes
Notes			
5. Does the proposal align with the applicable RESTORE Council definition of project or program?			Yes
Notes			
6. Does the budget narrative adequately describe the costs associated with the proposed activity?			More information needed
Notes	Funds are not requested for Project Management. Council staff recommend the sponsor consider whether sufficient funding is incorporated into the request for management of contractors, other general project management costs and agency overhead. Is project management to be provided through the leveraged BOEM funding, or might additional funding for this purpose be needed beyond the total project implementation costs described?		
7. Are there any recommended revisions to			No

the selected leveraged funding categories?			
Notes			
8. Have three external BAS reviews been completed?		More information needed	
Notes	Please see the external BAS review comments, and external reviews summary attached with these review comments.		
9. Have appropriate metrics been proposed to support all primary and secondary goals?		Yes	
Notes	The sponsor mentions that should the oil and gas structures be reefed, the project would yield additional habitat restoration and/or creation benefits. Council staff recommend that an additional metric be added to capture reefing (e.g., HR005 - Acres of artificial reef created) should it occur under the proposed project.		
10. Environmental compliance: If FPL Category 1 has been selected for the implementation component of the project or program, does the proposal include environmental compliance documentation that fully supports the selection of Category 1?		N/A	
Notes			
11. Geospatial Compliance: Have the appropriate geospatial files and associated metadata been submitted along with a map of the proposed project/program area?		Yes	
Notes			

FPL3b BAS Review Summary -- Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico

May 2020

Overall the external Best Available Science reviews for the *Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico* (DOI/BSEE) proposal are positive. Reviewers feel that the goals and objectives of the program are well justified using scientific literature and that the applicant has evaluated past successes and failures of similar efforts in their proposal. Reviewers also agree that the proposal demonstrates the potential environmental benefits to be gained from the proposed activity.

Both Reviewers 1 and 2 agree that the proposal objectives and methods have been justified using peer reviewed literature and publicly available information. For example, Reviewer 1 states that “the proposal is rich in references cited. All of them are pertinent to the tasks in hand and provide reassuring evidence that adequate background exists to carry out the project goals.” They further go on to specify that many of the methods for decommissioning energy structures were pioneered in the Gulf and that these are cited appropriately. However, Reviewer 3 wishes that citations regarding methodology were more developed, noting that “neither the methods nor the justification for selecting these methods have been addressed.” Reviewer 2 notes that they wish the methods would be described more granularly as planning moves forward.

While Reviewer 3 states that the greatest environmental risk would be from inaction, Reviewers 1 and 2 believe that the proposal could do a better job evaluating potential risks and uncertainties associated with the proposed activity. Reviewer 1 believes that remediation for presented risks should be better elaborated on. Reviewer 2 wishes the proposal contained information on potential crisis management/spill containment and further asks that the applicant develops a risk register for each project in the program, including a HazOp review.

Reviewer 3 notes that they would like the applicant to include their experience in remediation of energy facilities in the proposal. They further believe that the applicant should reach out to the Texas Railroad Commission for experience and guidance. Conversely, Reviewer 1 states that the BSEE’s experience and contractor selection procedures, along with their partnership with BOEM, will generate best practices for the program and that this is evident in the cited literature. They also highlight the potential future collaboration with State agencies for the reefing of the decommissioned sites. Reviewer 2 also notes BSSE’s experience but requests the inclusion of a project assurance manager unrelated to BSSE or BOEM to act as a technical liaison between the project and BSSE and suggests oil and gas industry personnel for partnership.

Reviewer 2 would like to see a forecast of cost breakdown by project but it should be noted that detailed project budgets are not required at the FPL proposal stage.

Reviewers 1 and 3 believe that the program's measures of success align with the Comprehensive Goal/Objective with Reviewer 1 stating "[...] the applicant includes tangible and defensible measures of success, including the extent of decommissioning attained in each of the four targeted wells and benefits generated such as removal of environmental and navigational hazards and the amount of 'clean' structure left in place for organisms." Reviewer 2 however writes that "no hard goals have been established" and urges the development of hard goals and stretch targets.

All reviewers agree that the program has identified a monitoring and data management strategy that will support measures of success. While Reviewer 2 would like to see additional project data management and metric development, detailed monitoring and data management plans are not required at the FPL proposal stage.

Reviewer 1 offers the following closing comment: "[The proposal] addresses a timely topic, i.e. the decommissioning of orphaned oil and gas wells, and presents a convincing case as to how it can be done based on best-science practices. It also provides reassuring arguments for the many environmental and societal benefits such decommissioning activities may generate."

BSEE responses to FPL 3b Internal Staff and BAS Review comments (May 2020) on Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico proposal

BSEE is pleased to receive overall positive Internal Staff and Best Available Science (BAS) reviews of this project and BSEE's proposal. Reviewers express that the goals and objectives of the program are well justified using scientific literature and that past successes and failures of similar efforts are evaluated in the proposal. Reviewers also agree that the proposal demonstrates the potential environmental benefits to be gained from the proposed activity.

BSEE has amended the proposal to address the vast majority of the comments, to provide more clarity on certain topics. The references cited in the proposal provide additional detail and were utilized to develop and inform this project.

The following responses to Internal Staff Review comments are provided to help clarify some of the project details regarding the project.

Costs associated with the proposed activity - **The Staff pointed out that funds are not requested for Project Management and recommended further consideration as to whether sufficient funding is incorporated into the request for management of contractors, other general project management costs, and agency overhead. The Staff also inquired about whether project management will be provided through the leveraged BOEM funding or whether additional funding for this purpose be needed beyond the total project implementation costs described.** Project Management will be provided through leveraging BSEE and BOEM funding. These comments have been further addressed in the 'Budget' section of the proposal.

Metrics to support primary and secondary goals - **The Staff recommend that an additional metric be added to capture reefing (e.g., HR005 - Acres of artificial reef created), should it occur under the proposed project.** Whether reefing is utilized as a means of decommissioning will be up to the contractor, in determining its preferred method(s) of decommissioning. BSEE, throughout the contracting and permitting process, will encourage the contractor to consider reefing. Should reefing be utilized, BSEE will follow its standard procedures to coordinate (see 'Collaboration' section) with the appropriate State to permit the reefing; upon which, BSEE and the State can then provide to the Council metrics and other valuable information relative to reefing.

The following responses to BAS Review comments are provided to help clarify some of the project details and/or rectify potential misunderstandings regarding the project.

Methodology - **Reviewer 3 wishes that citations regarding methodology were more developed; Reviewer 2 notes that they wish the methods would be described more granularly as planning moves forward.** The proposal cites the requirements in the regulations with which decommissioning methodology shall be in accordance. These regulations prescribe BSEE's requirements for properly decommissioning structures, wells, and pipeline segments and provides bibliographical information for ease of reference, should precise details on specific methodologies be sought. These comments have been further addressed in the 'Proposed Methods' section of the proposal (and associated, bibliographical information).

Risk remediation - **Reviewer 1 believes that remediation for presented risks should be better elaborated on; Reviewer 2 wishes the proposal contained information on potential crisis management/spill containment and further asks that a risk register and HazOp review be considered.** These comments have been generally addressed in the 'Risk and Uncertainties' section of the proposal, including a new bibliographical source.

Remediation of energy facilities - **Reviewer 3 notes that they would like the applicant to include their experience in remediation of energy facilities in the proposal.** This comment has been further addressed in the 'Monitoring and Adaptive Management' section of the proposal.

Texas Railroad Commission - **Reviewer 3 recommends the applicant reach out to the Texas Railroad Commission for experience and guidance.** Should the project become a RESTORE Council funded project near Matagorda Island or High Island areas, BSEE will reach out to the Texas Railroad Commission and encourage the contractor to do likewise, as appropriate.

Project management - **Reviewer 2 notes BSSE's experience but requests the inclusion of a project assurance manager unrelated to BSSE or BOEM to act as a technical liaison between the project and BSEE and suggests oil and gas industry personnel for partnership.** This comment has been further addressed in the 'Monitoring and Adaptive Management' section of the proposal.

Forecast of cost breakdown by project - **Reviewer 2 would like to see a forecast of cost breakdown by project.** The cost breakdown by project will be determined and provided by the contractor at a later stage in the process. Detailed project budgets are not required at the FPL proposal stage. BSEE can provide such information at an appropriate point in the process.

Goals and targets - **Reviewer 2 urges the development of hard goals and stretch targets.** This comment has been further addressed in the 'Metrics' section of the proposal.

Project data management and metric development - **Reviewer 2 would like to see additional project data management and metric development.** Detailed monitoring and data management plans are not required at the FPL proposal stage. BSEE can provide such information at an appropriate point in the process.

Gulf Coast Ecosystem Restoration Council

FPL 3b Internal Best Available Science Review Panel Summary

July 2020

Introduction

On Tuesday, June 30, and Wednesday July 1, 2020 the RESTORE Council convened the Funded Priorities List (FPL) 3b Internal Best Available Science (BAS) Review Panel. The purpose of this internal panel was to use Council member-agency expertise to address external BAS review comments provided for FPL 3b submitted project/program proposals, and potentially identify project/program synergies not identified prior to proposal submission. The ultimate goal of the panel was to provide Council members with substantive best available science content to inform their decision-making.

The internal panel was convened via webinar with representatives from each of the Council's eleven member agencies present. Each BAS Panel member was provided the following:

- 1) Full FPL 3b proposals
- 2) 3 external BAS reviews for each proposal
- 3) Summary of external BAS reviews for each proposal
- 4) Proposal Sponsor's response to the BAS reviews summary
- 5) Any proposed revisions to the proposal

Proposal sponsors provided a brief synopsis of their proposal to the panel, a summary of comments made in external reviews, and discussed their proposed response to the external reviews. Council staff then solicited feedback from the panel on the proposal sponsor's presentation of comments and responses to those comments, and any additional BAS concerns. Council staff also solicited feedback on any existing or future synergies with other Gulf restoration activities. The proceedings of the meeting for this proposal are summarized below.

Department of the Interior

Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico

Feedback from the panel on the proposal sponsor's presentation of comments and responses to those comments, and any additional BAS concerns:

References: Development of citations regarding methodology.

- The BAS panel agrees that DOI has appropriately addressed this comment.

Methodology: Methods described more granularly as planning moves forward.

- The BAS panel agrees that DOI has appropriately addressed this comment.

Risk mitigation: Remediation for presented risks should be better elaborated on; proposal could contain information on potential crisis management/spill containment; a risk register and HazOp review should be considered.

- The BAS panel agrees that DOI has appropriately addressed this comment.

Past experience: Include experience in remediation of energy facilities in the proposal.

- The BAS panel agrees that DOI has appropriately addressed this comment.

Lessons learned: Reach out to the Texas Railroad Commission for experience and guidance.

- The BAS panel agrees that DOI has appropriately addressed this comment.

Coordination: Inclusion of a project assurance manager unrelated to BSSE or BOEM to act as a technical liaison between the project and BSEE

- The BAS panel agrees that DOI has appropriately addressed this comment.

Budget: Forecast cost breakdowns

- The BAS panel agrees that DOI has appropriately addressed this comment.

Goals and metric targets: Development of hard goals and stretch targets

- The BAS panel agrees that DOI has appropriately addressed this comment.

Data management: Additional project data management

- The BAS panel agrees that DOI has appropriately addressed this comment.

Metrics: Additional metric development

- The BAS panel agrees that DOI has appropriately addressed this comment.

Panel comments on existing or future synergies with proposed activity:

Panel members had no further comments on proposal synergies.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico
Location (If Applicable): Gulf-wide
Council Member Bureau or Agency: U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement
Type of Funding Requested: Planning / Implementation

Reviewed by: Reviewer 1
Date of Review: May 2 2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
The proposal is rich in references cited. All of them are pertinent to the tasks in hand and provide re-assuring evidence that adequate background exists to carry out the project goals.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
The methods presented here are highly applicable to the Gulf Coast region. As a matter of fact, given the prominence of oil and gas structures in the Gulf of Mexico, many methods for successful decommissioning of such structures have been developed in the Gulf of Mexico, and cited appropriately here.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	
Please see my response to Question 1. I find the literature cited to be supportive of the work planned in this project, and reassuring that the authors are considering prior knowledge adequately to carry out their goals successfully. Perhaps the proposal could have included a bit more of peer-reviewed articles, but this is not a major issue.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Need more information
Comments:	
The proposal presents some risks and uncertainties, and some contingency plans to deal with it. However, the contingency plans could have been better elaborated. What to do in the case of "Other unlikely risks during decommissioning could include a contractor's inability to complete its decommissioning or a portion of the facility breaking away and causing damage elsewhere during storms and hurricanes". With the stakes being so high, potential remediation measures for these unlikely contingencies should have been presented.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
The execution of this project relies on the successful selection of a contractor that will actually carry out the work. Based on the experience of the applicant, including familiarity with the problem and selection procedures for contractors that can complete decommissioning activities well, I am reassured the project will be performed with the best knowledge and practices available.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
Along with working closely with the contractor, the applicant will also coordinate and integrate efforts with BOEM to ensure the decommissioning activities are completed to full satisfaction. This is reassuring that, along with solid expertise provided in an integrated and coordinated fashion by the contractor, applicant and BOEM, there will be ample oversight by the two latter agencies for successful completion of the project. In addition, the sponsor will pursue opportunities to collaborate with States for reefing of the decommissioned sites.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Need more information
Comments:	

As I mention in my reply to Question 4, the proposal is a bit shy in its elaboration of contingency plans for unexpected problems, and how best science can help support such plans. Please see my reply to Question 4 for verbatim examples provided in the proposal.

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
BSEE and BOEM have ample experience in the decommissioning of orphaned oil and gas wells. This is clearly demonstrated in their mission and history of specific activities done in the Gulf of Mexico and beyond, as can be seen in the references provided in the proposal. They also have much experience in recruiting contractors that can execute the implementation of decommissioning projects to excellent standards.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
The objectives, including what wells will be decommissioned as well as the specific phases and activities to complete decommissioning, are clearly spelled out in the proposal. Importantly, the applicant also provides measures to gauge the success of the project, i.e. the extent of decommissioning in the four targeted wells and improved environmental quality and safety conditons brought about.	

Question C

Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
<p>Comments:</p> <p>The proposal elaborates on several state-of-the art methods for well decommissioning. The final choice will be made working with a contractor, but, based on the experience of the applicant and the contractor that will be selected for this project, I have no doubts the best methods available for well decommissioning will be used.</p>	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
<p>Comments:</p> <p>The applicant describes well what benefits can be expected from well decommissioning, such as improved environmental conditions, better safety for navigation, “clean” structure left in place that can act as substrate/habitat for organisms, and, partnering with States and other agencies, potentially further reefing the structures left in place.</p>	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
<p>Comments:</p> <p>As mentioned in my response to Question B in the “Science Context Evaluation” section, the applicant includes tangible and defensible measures of success, including the extent of decommissioning attained in each of the four targeted wells and benefits generated such as removal of environmental and navigational hazards and the amount of “clean” structure left in place for organisms.</p>	

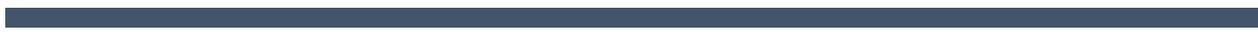
Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
The project makes a compelling case that, once the orphaned wells are decommissioned following state-of-the-art protocols, they will cease to pose environmental and safety threats. Importantly, the applicant also shows that decommissioned wells, left in whatever structure is stable, safe and environmentally friendly, should also be resilient to future perturbations such as hurricanes. There are few, if any, long term potential risks for wells that have been decommissioned following state-of-the-art protocols.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
As I have been saying in my responses above, this is arguably the weakest point of the project. The applicant recognizes some risks that, although improbable, could still materialize to some extent, i.e. "Other unlikely risks during decommissioning could include a contractor's inability to complete its decommissioning or a portion of the facility breaking away and causing damage elsewhere during storms and hurricanes". However, the proposal does not elaborate on a contingency plan for such risks.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
The references and discussion provided in the proposal is relevant, timely and compelling for the goals sought. The theme of orphaned well decommissioning is well elaborated, and the latest understanding and knowledge is clearly brought up and discussed as necessary in the proposal.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
The proposal covers appropriately pertinent background for the theme of orphaned well decommissioning, identifying threats/risk and resulting potential damage if orphaned wells are not decommissioned; defining successful decommissioning and identifying techniques to achieve it; and presenting how to cope with unexpected problems (although see my comments above about the proposal falling a bit shy at a thorough presentation of contingency plans).	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
Based on the best available knowledge to date, the applicant has clearly spelled out the techniques to achieve as well as the criteria to gauge successful orphaned well decommissioning. Along with this, the applicant will also devise plans for monitoring, adaptive management, and data archiving and management, which will be leveraged with BOEM moneys. These plans, together with the experience amassed from past similar project, will allow the applicant to continuously re-evaluate progress in the project and, as needed, implement best-science measures to correct, alleviate and adapt to unexpected changes or problems that occur during the project to ensure its successful completion.	



Please summarize any additional information needed below:

This is a strong proposal. It addresses a timely topic, i.e. the decommissioning of orphaned oil and gas wells, and presents a convincing case as to how it can be done based on best-science practices. It also provides reassuring arguments for the many environmental and societal benefits such decommissioning activities may generate. The plan to recruit a contractor to carry out the work is savvy, and the continuous oversight by the applicant and BOEM will ensure successful completion of the project. The efforts are scalable, i.e. can be downsized or upsized as needed, which will render this project a reference of successful well decommissioning in the Gulf of Mexico and transferable to other areas in the Gulf and beyond. Finally, monitoring and adaptive management plans ensure timely and adequate resolution of contingencies and further reinforce successful project completion.



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico
Location (If Applicable): Gulf-wide
Council Member Bureau or Agency: U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement
Type of Funding Requested: Planning / Implementation

Reviewed by: Reviewer 2
Date of Review: 5/6/2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Yes
Comments:	
Well stated.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
Directly pertains to the Gulf Coast.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Yes
Comments:	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Need more information
Comments:	
There is no mention of crisis management / spill containment in the project description. Plugging and abandonment are high risk activities. This should be addressed.	
Also a risk register should be developed for each project to be conducted including performing a HazOp review.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
No additional work required in this area.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
No additional work required in this area	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Need more information
Comments:	
There is no mention of crisis management / spill containment in the project description. Plugging and abandonment are high risk activities. This should be addressed.	
Also a risk register should be developed for each project to be conducted including performing a HazOp review.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	Yes
Comments:	
BSEE is experienced in this area but Also need to bring in a project assurance manager that is unrelated to BSEE or BOEM that can make	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
Would like to see more forecast of project cost per project rather than lumped together. Also need to bring in a project assurance manager that is unrelated to BSEE or BOEM that can act as a technical liaison between the project and BSEE	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	Yes
Comments:	
The methods have been described at a 10,000' level and need to have some granularity added to details of the project before moving forward with further planning.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
Need to address the potential for environmental damages resulting from operations to PxA and decommission the facility	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Need more information
Comments:	
There are targets established but it seems that no hard goals have been established. Need to define hard goals and stretch targets.	

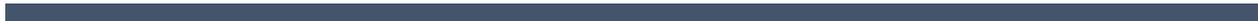
Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
General risk have been lightly addressed but additional risk need to be addressed. A Risk register needs to be developed for the project. This will required experts in all areas to perform a HazOp review and risk categorized and how the risk should be addressed.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Need more information
Comments:	
See answer to Question F	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	Yes
Comments:	
Need to partner with knowledgeable oil and gas industry personnel that will not be involved in the performance of the actual work for input and benchmarking.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
Need to partner with knowledgeable oil and gas industry personnel that will not be involved in the performance of the actual work for input and benchmarking.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Need more information
Comments:	
It has been identified but addition project data management and metrics need to be developed.	



Please summarize any additional information needed below:
<p>Critical to this project being successful are the following:</p> <ul style="list-style-type: none"> Benchmarking oil and gas industry activity of this nature Selection of a non-agency and non-contractor project assurance manager Development of a Risk Register covering all aspects of the projects Performance of a HazOp review of the projects Additional granularity of details of the individual projects Development of a Crisis Management and Spill plan for each project



SCIENCE EVALUATION

Bucket 2: Comprehensive Plan Component

Proposal Title: Decommissioning OCS Orphaned Energy Facilities in the Gulf of Mexico
Location (If Applicable): Gulf-wide
Council Member Bureau or Agency: U.S. Department of the Interior, Bureau of Safety and Environmental Enforcement
Type of Funding Requested: Planning / Implementation

Reviewed by: Reviewer 3
Date of Review: May 7, 2020

Best Available Science:

These 4 factors/elements help frame the reviewer's answers to A, B and C found in next section:

Question 1.	
Have the proposal objectives, including proposed methods, been justified using peer reviewed and/or publicly available information?	Need more information
Comments:	
Plugging orphaned wells, removing or retiring pipelines, and removal of surface structures are all easily justifiable. Discussion of proposal methods is missing. These methods are quite standard. Appropriate citations regarding these methods should be included.	

Question 2.	
If information supporting the proposal does not directly pertain to the Gulf Coast region, are the proposal's methods reasonably supported and adaptable to that geographic area?	Yes
Comments:	
There is no information included that is inappropriate for the Gulf Coast region. As noted above, there is information that is missing.	

Question 3.	
Are the literature sources used to support the proposal accurately and completely cited? Are the literature sources represented in a fair and unbiased manner?	Need more information
Comments:	
There is insufficient literature on the methods to be employed. Literature on justification is adequate.	

Question 4.	
Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk in the near- and/or long-term that the project/program will be obsolete or not function as planned?)	Yes
Comments:	
The proposal correctly notes that the greatest risk is posed by inaction and leaving he orphaned and abandoned wells, pipelines, and facilities in place.	

Based on the answers to the previous 4 questions, and *giving deference to the sponsor to provide within reason the use of best available science*, the following three questions can be answered:

Question A	
Has the applicant provided reasonable justification that the proposal is based on science that uses peer- reviewed and publicly available data?	Yes
Comments:	
Justification for the proposal is not in question.	

Question B	
Has the applicant provided reasonable justification that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?	Yes
Comments:	
The proposal justification is easily supported by the quality, objectivity, and integrity of information.	

Question C	
Has the applicant provided reasonable justification that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects/programs?	Yes
Comments:	
The risks due to inaction on this proposal are clearly recognized. The proposal clearly communicates these risks.	

Science Context Evaluation:

Question A	
Has the project/program sponsor or project partners demonstrated experience in implementing a project/program similar to the one being proposed?	No
Comments:	
The sponsor did not discuss its experience in remediation of orphan wells, pipelines, and other structures. The sponsor did not include the Texas Railroad Commission as a collaborator, which would provide considerable experience and guidance in this project. RRC should be added to the team. As noted above, there is no discussion of remediation methods.	

Question B	
Does the project/program have clearly defined goals objectives?	Yes
Comments:	
The objectives are clearly defined.	

Question C	
Has the proposal provided a clear description of the methods proposed, and appropriate justification for why the method is being selected (e.g., scientifically sound; cost-effectiveness)?	No
Comments:	
This information is clearly lacking from the proposal. Neither the methods nor the justification for selecting these methods have been addressed. It is imperative to include this information in the proposal.	

Question D	
Does the project/program identify the likely environmental benefits of the proposed activity? Where applicable, does the application discuss those benefits in reference to one or more underlying environmental stressors identified by best available science and/or regional plans?	Yes
Comments:	
The environmental benefits that would be achieved by this proposal are clear.	

Question E	
Does the project/program have measures of success (i.e., metrics) that align with the primary Comprehensive Plan goal(s)/objectives? (Captures the statistical information requirement as defined by RESTORE Act)	Yes
Comments:	
The number of wells plugged, amount of pipelines remediated, and number/size of facilities remediated are adequate metrics if standard practices are followed.	

Question F	
Does the proposal discuss the project/program's vulnerability to potential long-term environmental risks (i.e., climate, pollution, changing land use)? (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
The long-term risks due to inaction are clear.	

Question G	
Does the project/program consider other applicable short-term implementation risks and scientific uncertainties? Such risks may include the potential for unanticipated adverse environmental and/or socio-economic impacts from project implementation. Is there a mitigation plan in place to address these risks? Any relevant scientific uncertainties and/or data gaps should also be discussed. (Captures risk measures as defined under best available science by the RESTORE Act)	Yes
Comments:	
Short-term risks are not significant. Standard practices would address any potential short-term risks.	

Question H	
Does the project/program consider recent and/or relevant information in discussing the elements above?	No
Comments:	
Since methods are not discussed to any degree, recent and/or relevant information on remediation methods is absent.	

Question I	
Has the project/program evaluated past successes and failures of similar efforts? (Captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the RESTORE Act)	Yes
Comments:	
This is a qualified yes. Past failures would be wells, pipelines, or facilities that were not remediated. The risk from unremediated wells, pipelines, or facilities is obvious and extensive discussion in the proposal is not necessary.	

Question J	
Has the project/program identified a monitoring and data management strategy that will support project measures of success (i.e., metrics). If so, is appropriate best available science justification provided? If applicable, how is adaptive management informed by the performance criteria? (Captures statistical information requirement a defined by the RESTORE Act)	Yes
Comments:	
Wells, pipelines, and other facilities that are properly remediated should completely remove the risk from these potential sources. Any environmental damage incurred from these sources after remediation would be a clear sign of performance failure.	



Please summarize any additional information needed below:
The objective of the proposal to remediate wells, pipelines, and other facilities located in environmentally fragile coastal areas is easily justified. The proposal has no discussion on methods to be used to achieve these objectives. The sponsor has not offered any documentation that it has expertise in this area. The sponsor would benefit by including the Texas RRC on its team. The RRC has ample expertise in a number of these remediation methods. The sponsor needs to include discussion on what methods are to be undertaken to remediate the wells, pipelines, and other facilities.