Oil and Gas and Sulfur Operations on the Outer Continental Shelf
HPHT and Subpart B

Initial Regulatory Impact Analysis

RIN: 1014–AA49

PROPOSED RULE

DEPARTMENT OF THE INTERIOR

Bureau of Safety and Environmental Enforcement

30 CFR Part 250

May 16, 2022

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LIST OF ACRONYMS

BSEE	Bureau of Safety and Environmental
DWOP	Deepwater Operations Plan
EO	Executive Order
HPHT	High Pressure, High Temperature
I3P	Independent Third Party
IRFA	Initial Regulatory Flexibility Analysis
IRIA	Initial Regulatory Impact Analysis
NTL	Notice to Lessees and Operators
NUT	New or unusual technology
OCS	Outer Continental Shelf
OMB	Office of Management and Budget
SME	Subject Matter Expert
SPE	Society of Petroleum Engineers
UMRA	Unfunded Mandates Reform Act

EXECUTIVE SUMMARY

This Initial Regulatory Impact Analysis (IRIA) provides analysis of the potential benefits and costs for the Bureau of Safety and Environmental Enforcement's (BSEE) Notice of Proposed Rulemaking for Oil and Gas and Sulfur Operations in the Outer Continental Shelf – High Pressure High Temperature and Subpart B Revisions. This proposed rule would revise requirements for certain submittals to BSEE, including project conceptual plans and Deepwater Operations Plans (DWOP). This proposed rule would also add requirements for high-pressure, high-temperature (HPHT) barrier equipment and systems, new or unusual technology (NUT), and independent third-party (I3P) reviews. It would codify BSEE policy involving DWOP review and Notices to Lessees and Operators (NTLs) to provide consistency and clarity for equipment and operational requirements associated with certain required submittals and would provide a cohesive, structured approach for BSEE review of HPHT projects, barrier equipment, and new or unusual technology.

Changes to Federal regulations must undergo several types of economic analysis. Executive Orders (EOs) 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select a regulatory approach that maximizes net benefits (accounting for the potential economic, environmental, public health, and safety effects). EO 13563 emphasizes the importance of quantifying both costs and benefits, reducing costs, harmonizing rules, and promoting flexibility. Section 3(f) of EO 12866 defines a "significant regulatory action" as any regulatory action that is likely to result in a rule that does any of the following:

1. Has an annual effect on the economy of $100 million or more or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or Tribal governments or communities (also referred to as "economically significant").
2. Creates serious inconsistency or otherwise interferes with an action taken or planned by another agency.
3. Materially alters the budgetary impacts of entitlement grants, user fees, or loan programs, or the rights and obligations of recipients thereof.
4. Raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the EO.

This proposed rule would not constitute an economically significant regulatory action under Section 3(f) of EO 12866, since the annual effect of the rule is not expected to meet any of the four criteria outlined above, including not exceeding $100 million in at least 1 year during a given 10-year period.

ES.A NEED FOR REGULATORY ACTION

Operations in HPHT environments are relatively new on the U.S. Outer Continental Shelf (OCS). These operations require the use of equipment that exists at the limits of current technology. Due to limited industry experience in HPHT environments, there are few standards that directly address HPHT equipment and operations, requiring BSEE's careful case-by-case review of HPHT projects. The intent of the proposed rule is to provide regulatory certainty to all stakeholders regarding BSEE review of HPHT projects. It clarifies the DWOP process and codifies existing BSEE policy and NTL guidance documents, which will provide a cohesive, structured approach for BSEE review of HPHT projects. It also enhances safety by requiring I3Ps to perform various functions and verifications for certain conceptual plans. As an EO 12866 insignificant rule, it does not require an analysis of alternatives to the proposed regulation.

ES.B BASELINE ASSUMPTIONS

The economic analysis presented estimates of potential impacts of the proposed rule by comparing the costs and benefits of the new provisions in the proposed rule to the baseline scenario. The baseline scenario represents BSEE's best assessment of what operations in HPHT environments and BSEE regulatory reviews would be absent this regulatory action. The baseline assumes that the industry complies with existing regulations and follows BSEE guidance and policy and applicable industry standards. The costs and benefits of the proposed rule arise from the difference between baseline and proposed regulatory requirements.

ES.C COSTS OF THE PROPOSED RULE

Table ES 1 presents the total and annualized costs of the proposed rule. As the table shows, the estimated costs over the 10-year period are $24.7 million discounted to 2020 at 3 percent, and $20.4 million discounted at 7 percent.

Table ES 1: Costs 2021–2030 Associated with Amendments to DWOP and HPHT Regulations (2020$)

	Discounted at 3%	Discounted at 7%
Total	$24,741,936	$20,371,966
Annualized	$2,900,510	$2,900,510

ES.D BENEFITS OF THE PROPOSED RULE

This proposed rule would provide regulatory certainty to all stakeholders regarding BSEE review of HPHT plans by clarifying requirements for plan submission and content. With more clarity about requirements, designs and submissions would be less likely to need revisions or supplemental information before approval. Safety benefits would arise from enhanced I3P verification process and reporting requirements for NUT failures, giving BSEE improved understanding of reliability and possible causes of failure. These benefits have not been quantified because no relevant data are available, and a quantification of the benefit would be too uncertain.

ES.E OMB A-4 ACCOUNTING STATEMENT

Table ES 2 presents annualized costs and qualitative impacts of the proposed rule in 2020 dollars.

Table ES 2: OMB Circular A-4 Accounting Statement (Millions of 2020$)

Category	Primary Estimate	Low Estimate	High Estimate	Units			Notes
				Year Dollars	Disc	Period Covered	
Benefits							
Annualized Monetized $ Million/Year					7%		Not monetized.
					3%		
Annualized Quantified					7%		Not quantified.
					3%		
Qualitative							Clarification benefits on HPHT and DWOP requirements to industry stakeholders. Safety benefits from I3P verification and reporting requirements.
Costs							
Annualized Monetized $ Million/Year	$2.9			$million	7%	2021–2030	
	$2.9			$million	3%	2021–2030	
Small Business							
See Initial Regulatory Flexibility Analysis (IRFA).							

ES.F INITIAL REGULATORY FLEXIBILITY ANALYSIS (IRFA)

The Regulatory Flexibility Act, 5 U.S.C. §§ 601-612, requires agencies to analyze the economic impact of regulations when there is likely to be a significant economic impact on a substantial number of small entities while minimizing the burden on small entities. BSEE has prepared an IRFA and currently estimates that the proposed rule, if finalized in its current form, would not have a significant economic impact on a substantial number of small entities. BSEE estimates that the average annual cost per firm attributed to the new requirements would be approximately 0.006 percent of average annual revenue for all firms, including small entities.

ES.G UNFUNDED MANDATES REFORM ACT (UMRA) OF 1995 ANALYSIS

This proposed rule does not impose an unfunded Federal mandate on State, local, or Tribal governments and does not have a significant or unique effect on State, local, or Tribal governments. Thus, the rule does not have disproportionate budgetary effects on these governments. BSEE estimates that the changes in this rule would result in costs that do not exceed $160 million per year to regulated entities. Therefore, BSEE does not project that a written statement under UMRA will be required.

ES.H ENERGY EFFECTS ANALYSIS

Under EO 13211 (66 FR 28355, May 22, 2001), agencies are required to prepare and submit to the Office of Management and Budget (OMB) a Statement of Energy Effects for significant energy actions, including a detailed statement of any adverse effects on energy supply, distribution, or use (including a shortfall in supply, price increases, and increased use of foreign supplies) expected to result from the action and a discussion of reasonable alternatives and their effects. The proposed rule does not seek to add any new regulatory compliance requirements that would lead to adverse effects on the energy supply, distribution, or use.

I. INTRODUCTION

This section provides a background for, the need for, and a description of the proposed rule. Section II introduces the assumptions of analysis BSEE used to complete this IRIA. Section III presents an analysis of the proposed rule's costs to affected industries and BSEE. Section IV presents an analysis of the benefits of the proposed rule. Section V presents the net benefits of the proposed rule by comparing the rule's quantifiable monetized costs with the qualitative benefits. Section VI presents findings from the IRFA of the proposed rule. Section VII presents findings from the UMRA analysis. Section VIII presents findings from the energy effects analysis. As the proposal is not projected to be an EO 12866 significant rule, this IRIA does not include a benefit-cost analysis of alternatives to the proposed regulation.

I.A BACKGROUND

BSEE regulates offshore oil and gas operations conducted on the OCS and seeks to improve safety and mitigate risks associated with offshore exploration, production, and development (See 43 U.S.C. 1347-1348; 30 CFR 250.101). BSEE's regulatory program covers a wide range of facilities and activities, including drilling, completion, workover, production, pipeline, and decommissioning operations. Drilling, completion, workover, and decommissioning operations are types of well operations that offshore operators perform on the OCS.

The purpose of this proposed rule is to codify and clarify the process for BSEE review of HPHT or NUT projects and equipment. Currently BSEE reviews HPHT projects under existing provisions for the DWOP process (see current 30 CFR 250.286-250.295). The existing DWOP process provides BSEE authority to request additional information for HPHT projects, when needed, and NTLs (NTL No. 2019-G02 and No. 2019-G03) include guidance on the specific HPHT information prospective operators should provide to BSEE. Any aspects of HPHT projects that are not covered by the DWOP process, other operational regulations, and the NTLs are reviewed through alternative procedures and equipment requests (30 CFR 250.141).

HPHT environments are defined in the proposed rule as: (1) operations where equipment pressure rated for greater than 15,000 psia or a temperature rating greater than 350 degrees Fahrenheit is needed; (2) maximum anticipated surface pressure or shut in tubing pressure greater than 15,000 psia or temperatures greater than 350 degrees Fahrenheit measured at the seafloor for subsea wellheads or at the surface for surface wellheads; or (3) flowing temperatures greater than 350 degrees Fahrenheit measured at the seafloor for subsea wellheads or at the surface for surface wellheads. This is consistent with how BSEE currently defines HPHT environments in 30 CFR 250.804.

The proposed rule would also define NUT to mean equipment or procedures used for any drilling, completion, workover, intervention, injection, production, pipeline, platform, decommissioning, or abandonment operation that meet any of the following:

1. Have not been approved for use nor used extensively in a BSEE OCS region.
2. Have not been approved for use nor used extensively under the anticipated operating conditions.
3. Have operating characteristics that are outside the performance parameters established in 30 CFR part 250.
4. Will operate in an HPHT environment, as defined in proposed § 250.105.
5. Is part of a primary or secondary barrier system that uses materials, design analysis techniques, validation testing methods, or manufacturing processes not addressed in existing industry standards.

In the proposed rule, BSEE would define a primary barrier system as the component or group of components that is designated as the principle means of isolating the source of hydrocarbons

and/or pressure from people and the environment. A secondary barrier system would be defined to mean the component or group of components that is designated as the secondary means of isolating the source of hydrocarbons and/or pressure from people and the environment.

The proposed DWOP process consists of two phases:

1. The Conceptual Plan: Outlines certain equipment and process specifications, operational concepts, and the basis of design that you plan to use for project development, and for applicable equipment design, installation and operation. The proposed revisions to sections 250.227 through 250.229 identify the different types of Conceptual Plans and prescribe what information each type must contain. Each Conceptual Plan may be submitted separately or combined as applicable.
2. The DWOP: Proposes specific design, fabrication, installation, and operational requirements for equipment, systems, and activities as applicable in §§ 250.236 through 250.242.

BSEE is proposing to add HPHT equipment requirements and revise existing regulations for the DWOP process. This proposed rule would revise requirements for certain submittals to BSEE, including project conceptual plans and DWOPs. This proposed rule would also add requirements for HPHT barrier equipment and systems, NUT, and I3P reviews. This proposed rule would codify existing BSEE policy involving DWOP review and NTLs to provide consistency and clarity for equipment and operational requirements associated with certain required submittals and would provide a cohesive, structured approach for BSEE review of HPHT projects, barrier equipment, and NUT.

I.B NEED FOR REGULATORY ACTION

Operations in HPHT environments are relatively new on the U.S. OCS. These operations require the use of equipment that exists at the limits of current technology. Due to limited industry experience in HPHT environments, there are few standards that directly address HPHT equipment and operations, requiring BSEE's careful case-by-case review of HPHT projects. To date, BSEE has received several applications for projects in an HPHT operating environment and anticipates HPHT activity to increase due to equipment technological advancements and industry capabilities to develop resources in these environments. Although BSEE currently may require the information needed to evaluate HPHT projects on a case-by-case basis, this rule would provide regulatory certainty to all stakeholders regarding BSEE review of HPHT projects. It clarifies the DWOP process and codifies existing BSEE policy and guidance (NTLs). This rule would provide a cohesive, structured approach for BSEE review of HPHT projects. It would enhance safety by requiring I3Ps to perform various functions and verifications for certain conceptual plans. The proposed rule would also increase safety benefits by requiring reporting of NUT failures, which is expected to enable BSEE to improve its understanding and review of new technologies, leading to approval of NUT with improved safety history.

I.C BASELINE

BSEE's estimation of a baseline in this IRIA is consistent with OMB's guidance as specified in OMB Circular A-4. The baseline scenario represents BSEE's best assessment of the benefits and costs of current HPHT operations, and regulatory submissions, reviews, and decisions absent promulgation of this rule. The analysis estimates impacts of the proposed rule by comparing the costs and benefits of the new and revised provisions in the proposed rule to the baseline. Many of the provisions in this proposed rule are consistent with current industry practice and are already being followed by companies and BSEE. These are identified in Table 1 as having no impact on cost because they are considered baseline costs. However, there are a few points where the proposed rule would require different or additional submissions. The baseline assumes that current industry practice includes compliance with existing regulations, as well as adherence to the few applicable industry consensus standards and applicable agency guidance documents. The analysis also excludes an analysis of impacts resulting from codification of industry standards with which industry already conforms.

I.D PROVISIONS OF THE PROPOSED RULE

Table 1 describes the provisions of the proposed rule.

Table 1: Summary of Amendments

Current Regulations Section	Proposed Rule Section	Nature of Change	Impact on Industry Compliance Cost	Impact on Safety and Environmental Protection
Subpart A				
250.804	250.105	Would move the definition of HPHT to make it applicable to all operations, not just production.	No cost.	No identified impact.
Subpart B				
250.2	250.2	Would add definitions for barrier categorization, primary and secondary barriers, and NUT.	No cost.	No identified impact.
250.201	250.201	Would add information about the three new conceptual plans and when submittal of each plan is required.	No cost.	No identified impact.
250.204	250.202	Moved without revision.	No cost.	No identified impact.
250.205	250.203	Moved without revision.	No cost.	No identified impact.
New	250.204	Would clarify what information must be submitted to BSEE if an operator plans to install HPHT barrier equipment.	No cost.	No identified impact.
New	250.206	Would codify some of the barrier concepts from existing BSEE guidance.	No cost.	No identified impact.
New	250.207	Would require the installation and maintenance of a primary and secondary barrier system to contain the source.	No cost.	No identified impact.
550.28	250.208	Would include similar content with minor formatting changes to reflect BSEE applicability.	No cost.	No identified impact.
550.281(a) and (b)	250.209	Would include similar content with minor formatting changes to reflect BSEE applicability.	No cost.	No identified impact.
250.282	250.21	Would include similar content with minor formatting changes to reflect BSEE applicability.	No cost.	No identified impact.
New	250.211	Would clarify the NUT failure reporting requirements.	Costs from reporting NUT failure.	Positive impact.
250.286	250.22	Would clarify the addition of NUT and the operations that could be covered under the DWOP process.	No cost.	No identified impact.

Current Regulations Section	Proposed Rule Section	Nature of Change	Impact on Industry Compliance Cost	Impact on Safety and Environmental Protection
250.287	250.221	Would include similar content and clarify when the DWOP process is applicable.	No cost.	No identified impact.
New	250.225	BSEE would add this section to identify the three new proposed conceptual plans.	No cost.	No identified impact.
250.288 and 250.290	250.226	Would include similar content and clarify when to submit the applicable conceptual plans.	No cost.	No identified impact.
250.289	250.227	Would include content from existing paragraphs (a),(b),(c),(i)(1) and specify the content of the project conceptual plan.	No cost.	No identified impact.
New	250.228	Would specify the content of the NUT conceptual plan.	Costs primarily arising from I3P requirements.	Positive impact.
New	250.229	Would specify the content of the NUT barrier conceptual plan.	Costs primarily arising from I3P requirements.	Positive impact.
New	250.23	Would specify the I3P nomination requirements.	Costs primarily arising from I3P requirements.	Positive impact.
New	250.231	Would specify the I3P requirements for applicable conceptual plan review.	Costs primarily arising from I3P requirements.	Positive Impact.
New	250.232	Would clarify the I3P report expectations.	Costs primarily arising from I3P requirements.	Positive Impact.
250.291	250.235	Would include similar content and clarify DWOP submittals to reflect NUT additions.	No cost.	No identified impact.
New	250.236	Would add a table listing the applicable sections with corresponding information for the DWOP content.	No cost.	No identified impact.
250.292	250.237	Would include content from existing paragraphs (a),(b) and clarify the general DWOP requirements.	No cost.	No identified impact.
250.292	250.238	Would include content from existing paragraphs (a), (b), (c) and clarify the completions information DWOP requirements.	No cost.	No identified impact.
250.292	250.239	Would include content from existing paragraphs (a), (b), (c) and clarify the structural information DWOP requirements.	No cost.	No identified impact.

Current Regulations Section	Proposed Rule Section	Nature of Change	Impact on Industry Compliance Cost	Impact on Safety and Environmental Protection
250.292	250.24	Would include content from existing paragraphs (a), (b), (c), (d), (e)(3) and clarify the production safety system information DWOP requirements.	No cost.	No identified impact.
250.292	250.241	Would include content from existing paragraphs (c)(2)(i),(ii),(iii) and clarify the subsea systems and pipeline information DWOP requirements.	No cost.	No identified impact.
New	250.242	Would clarify the NUT information DWOP requirements.	No cost.	No identified impact.
250.294	250.245	Would include similar content and clarify when an operator can combine the conceptual plan and the DWOP.	No cost.	No identified impact.
250.295	250.246	Would include similar content and clarify when a revised DWOP is necessary.	No cost.	No identified impact.
New	250.247	Would clarify when a supplemental DWOP is necessary.	No cost.	No identified impact.
New	250.248	Would clarify the content of a supplemental DWOP.	No cost.	No identified impact.

II. ASSUMPTIONS OF ANALYSIS

This chapter describes the assumptions and data used to prepare this IRIA, including the estimated monetized impacts, quantitative costs and qualitative benefits of the proposed rule. These assumptions include the forecast horizon, the baseline activity, the affected population, industry wages, and time burdens related to complying with the proposed provisions, industry activity levels, and other assumptions used to estimate the costs and impacts on the public.

II.A AFFECTED POPULATION AND ACTIVITY LEVELS

The proposed rule would affect operators on the OCS that submit DWOPs and operate in HPHT environments. Based on data for 2015-2020 on companies who submitted DWOPs and HPHT projects, BSEE estimates that 21 companies would be required to submit DWOPs over 2021-2030 and 4 companies would operate in HPHT environments. Of these, 2 companies would operate in HPHT environments and would also be required to submit DWOPs. It is assumed that the same number of companies, i.e. 23 over 2021-2030, would comply with the proposed regulation as would comply with the existing rule in the baseline.

II.B COMPLIANCE ACTIVITIES

The calculation of proposed industry compliance costs depends on the number and types of plans that operators will be required to submit under the proposed requirements as compared to plans currently submitted in the baseline.

Following is a brief description of each type of report:

- Conceptual plan (without specification of plan type): Outlines certain equipment and process specifications, operational concepts, and the basis of design that operators plan to use for project development, and for applicable equipment design, installation and operation.
- DWOP: Identifies specific design, fabrication, installation, and operational requirements for equipment, systems, and activities.
- DWOP revision for equipment change: Describes a DWOP revision involving a change in equipment, which would require a supplemental submission under the proposed rule.
- Project conceptual plan: The first of three conceptual plan types newly designated by proposed changes, which would be required for any project that is planned in water depths greater than 1,000 feet or will include the use of subsea tieback development technology regardless of water depth. Would require confirmation that the subsea production safety system will comply with Subpart H, along with supporting project technical specifications and a description and schedule of planned development activities.

- NUT conceptual plan: The second of three newly designated conceptual plans, required for any project or system that involves equipment or systems that are considered NUT under these regulations. Would require a description of the technology; its history, operations, testing, and inspection; justification and specific conditions under which it will be used; a demonstration of shut-in capabilities and procedures; a description of how the NUT would interact with other components or systems that will be utilized; and how this would impact failure modes and risks.
- Discretionary I3P verification of NUT conceptual plan: A discussion of the equipment's material selection, qualification, design verification analyses, and design validation testing; an explanation of why the analyses, processes, and procedures ensure that the equipment is fit-for-service in the applicable environment; and details for how the I3P will address the additional items listed in § 250.231.
- NUT barrier conceptual plan: The third of three newly designated conceptual plans, required for any project or system involving NUT that is also identified as a primary or secondary barrier. Would require a list and detailed diagram of the primary and secondary barriers; a list of the engineering standards that will be utilized in the equipment's material selection and qualification, design verification analysis, and design validation testing; a list of any alternate procedures or equipment or departures; a list of the functional requirements for which the barrier equipment is being designed; a description of the equipment's safety critical functions; and I3P nomination, verification, and reports.
- Mandatory I3P nomination and report: A new report required when an operator nominates an I3P. Would require the following information about the I3P: technical capabilities, size, and previous experience in third-party verification or experience in the design, fabrication, or installation of applicable offshore oil and gas equipment; in-house availability of, or access to, appropriate technology to review the specific project; ability to perform the I3P functions for the specific project; and previous experience with BSEE requirements and procedures.
- Supplemental DWOP: A new report required when additions or changes to a project physically alters the platform, process facilities, equipment, or systems approved in the original conceptual plan or DWOP, or if additions or changes involve the addition of any NUT to the project that was not previously covered under the NUT conceptual plan, NUT barrier conceptual plan, or DWOP. Would require the same information for the wells or equipment as required per applicable conceptual plan and DWOP requirements, and information for each applicable conceptual Plan or DWOP section that is being impacted by the equipment addition or change.
- NUT failure report: A new report notifying BSEE of a NUT failure and identifying the root causes of the failure.

Table 2 gives the total number of each type of report expected to be submitted over the 10-year period of analysis (2021–2030).

Table 2: Total Report Activity, 2021-2030

Report	Numbers Over 2021–2030**
Baseline	
Conceptual Plan (Not Involving HPHT)	70
Conceptual Plan (Involving HPHT – Includes I3P Reports)	94
DWOP (all)	50
DWOP Revision for Equipment Change (All)*	312
Proposed	
(i) Project Conceptual Plan	78
(ii) NUT Conceptual Plan	100
(ii I3P) I3P Verification of NUT Conceptual Plan at BSEE Discretion	38
(iii) NUT Barrier Conceptual Plan	130
(iii I3P) Mandatory I3P Nomination and Report for NUT Barrier Conceptual Plan	112
(iv) DWOP	50
(v) Supplemental DWOP	312
NUT Failure Report	18

Source: BSEE subject matter expert

* Revision that would require a supplemental submission under the proposed rule.

** These numbers are assumed to be spread uniformly over the 10 years: annual values estimated at 1/10th of the amount shown each year.

II.C UNIT COST FACTORS AND COMPLIANCE ACTIVITIES

To estimate the costs associated with the proposed provisions, BSEE computed unit-cost factors associated with each report under the baseline and proposed provision scenarios. The report costs depend on the BSEE level of effort and BSEE labor costs as well as the industry level of effort and industry labor costs. BSEE also estimated cost recovery fees for processing each report in the proposed rule; for this analysis, the government's recoverable costs are distinguished from its non-recoverable costs, and the recoverable costs are added to industry costs, since industry ultimately would cover them with cost recovery fees.

II.C.1 Level of Effort

Table 3 presents BSEE's estimates of level of effort in hours for BSEE and industry by report type.

Table 3: Industry and Government Level of Effort in Hours by Report Type, 2021–2030

Report	Industry Preparation Hours per Report	Government Hours per Report
Baseline		
Conceptual Plan (Not Involving HPHT)	40	51
Conceptual Plan (Involving HPHT – Includes I3P Reports)	1400	1392
DWOP (all)	212	271
DWOP Revision for Equipment Change (All)*	132	169
Proposed		
(i) Project Conceptual Plan	40	51
(ii) NUT Conceptual Plan	360	459
(ii I3P) I3P Verification of NUT Conceptual Plan at BSEE Discretion	560	277
(iii) NUT Barrier Conceptual Plan	720	692
(iii I3P) Mandatory I3P Nomination and Report for NUT Barrier Conceptual Plan	1400	692
(iv) DWOP	212	271
(v) Supplemental DWOP	132	169
NUT Failure Report	200	100

Source: BSEE subject matter expert

* Revision that would require a supplemental submission under the proposed rule.

II.C.2 Compensation Rates

BSEE uses labor compensation rates to calculate the costs to industry and BSEE associated with the DWOP and HPHT reports. The compensation rate reflects the total compensation paid to the staff doing the work and includes regular wages, overtime pay, vacation, sick leave, and all nonwage benefits such as medical and retirement insurance employer contributions.

To calculate the total compensation rate, BSEE subject matter experts (SMEs) identified the job positions or occupations of the staff who normally perform the related compliance activities being addressed by the rule. For industry, BSEE SMEs determined that the amendments primarily affect mid-level petroleum engineers responsible for conducting industry compliance work. For BSEE, SMEs used wages in BSEE Special Rate Table Number 0711 to calculate report cost recovery fees.[1]

For both BSEE and industry workers, a benefit multiplier was estimated to account for nonwage compensation received by the staff. For BSEE, this multiplier was applied to report wage costs (mainly based on cost recovery fees), as cost recovery fees only take wages into account. For industry, the following equation was used:

Total Hourly Compensation = Average Annual Hourly Wage (2020) X Benefit Multiplier

[1] https://apps.opm.gov/SpecialRates/2020/Table071101012020.aspx.

For the industry mid-level petroleum engineer, BSEE derived a base hourly wage using data from the Society of Petroleum Engineers (SPE) 2019 SPE Membership Salary Survey.[2] The survey gathers data on a number of different types of engineering occupations; BSEE chose to use the average of the SPE engineering occupations. The mean 2019 annual base pay for these occupations is $180,936.

Dividing these annual salary estimates by the average number of working hours in a year converts them to an hourly basis. BSEE assumes there are 2,080 work hours in a year (2,080 hours = 52 weeks X 40 hours per week). The average hourly base wage for an industry mid-level petroleum engineer, therefore, is calculated as $180,936 divided by 2,080, or $86.99 per hour. To inflate from 2019 to 2020 wages, BSEE used the average annual increase over the last 10 years for the wages of petroleum engineers, calculated from the Bureau of Labor Statistics Occupational Employment Statistics as being 2.8 percent. Therefore, the average hourly base wage for 2020 becomes $89.42 = (1 + 2.8%) X $86.99.

To account for nonwage benefits, BSEE used the same multipliers as used for the IRIA and Final Regulatory Impact Analysis for BSEE rulemaking "1014-AA39: Oil and Gas and Sulfur Operations on the Outer Continental Shelf Blowout Preventer and Well Control Revisions."[3] These multipliers are estimated to be 1.46 for BSEE and 1.32 for industry. The BSEE multiplier to calculate loaded report wage costs is utilized in the following section, while Table 4 outlines the calculations of loaded wage rates for industry.

Table 4: Industry Loaded Hourly Wages (2020$)

	Annual Base Salary 2019	Average Hourly Wage 2019	Wage Inflator	Average Hourly Wage 2020	Benefit Multiplier	Loaded Hourly Wage
	A	B = A ÷ 2080	C	D = B X (1 + C)	E	F = D X E
Industry	$180,936	$86.99	2.8%	$89.42	1.32	$118.04

II.C.3 Report Costs to BSEE

Table 5 outlines the wage cost to Government per report. The wage costs for all reports except "Conceptual Plan (Involving HPHT – Includes I3P Reports)" and "NUT Failure" are based on updated cost recovery fees. The "Conceptual Plan (Involving HPHT – Includes I3P Reports)" costs are based on a weighted average of fees for "(i) Project Conceptual Plan", "(ii) NUT Conceptual Plan" and "(iii) NUT Barrier Conceptual Plan." The "NUT Failure" costs are based on estimates of staff performing similar work on other reports. The costs to Government per plan are calculated by applying to the BSEE benefit multiplier of 1.46 listed above to wage costs to Government per plan.

[2] https://www.spe.org/media/filer_public/ee/ff/eeffeeec-4076-45f9-b578-8aec517b0adb/2019_salary_survey_highlight_report.pdf.
[3] https://www.regulations.gov/docket?D=BSEE-2018-0002.

Table 5: Wage Costs to Government by Report

	Unloaded Wage Cost to Government per Report	Benefit Multiplier	Wage Cost to Government per Report
	A	B	C = A X B
Baseline			
Conceptual Plan (Not Involving HPHT)	$2,510	1.46	$3,665
Conceptual Plan (Involving HPHT – Includes I3P Reports)	$75,979	1.46	$110,929
DWOP (all)	$13,907	1.46	$20,304
DWOP Revision for Equipment Change (All)*	$8,959	1.46	$13,080
Proposed			
(i) Project Conceptual Plan	$2,510	1.46	$3,665
(ii) NUT Conceptual Plan	$32,611	1.46	$47,612
(iii) NUT Barrier Conceptual Plan	$71,570	1.46	$104,492
(iv) DWOP	$13,907	1.46	$20,304
(v) Supplemental DWOP	$8,959	1.46	$13,080
NUT Failure Report	$6,321	1.46	$9,229

* Revision that would require a supplemental submission under the proposed rule.

II.C.4 Report Costs to Industry

Table 6 displays industry hours per report for each report. Hours for "(ii) NUT Conceptual Plan" are based on a weighted average of reports for "(ii) NUT Conceptual Plan" and "(ii I3P) I3P Verification of NUT Conceptual Plan at BSEE Discretion." Hours for "(iii) NUT Barrier Conceptual Plan" are based on a weighted average of reports for "(iii) NUT Barrier Conceptual Plan" and "(iii I3P) Mandatory I3P Nomination and Report." Applying the industry loaded hourly wage to industry hours per report gives the wage cost to industry per report.

Table 6: Wage Costs to Industry by Report

	Industry Hours per Report	Industry Loaded Hourly Wage	Wage Cost to Industry per Report
	A	B	C = A X B
Baseline			
Conceptual Plan (Not Involving HPHT)	40	$118.04	$4,722
Conceptual Plan (Involving HPHT – Includes I3P Reports)	1400	$118.04	$165,256
DWOP (all)	212	$118.04	$25,024
DWOP Revision for Equipment Change (All)*	132	$118.04	$15,581
Proposed			
(i) Project Conceptual Plan	40	$118.04	$4,722
(ii) NUT Conceptual Plan	573	$118.04	$67,613
(iii) NUT Barrier Conceptual Plan	1926	$118.04	$227,363
(iv) DWOP	212	$118.04	$25,024
(v) Supplemental DWOP	132	$118.04	$15,581
NUT Failure Report	200	$118.04	$23,608

* Revision that would require a supplemental submission under the proposed rule.

III. COSTS OF THE PROPOSED RULE

The costs of the proposed rule are the difference between the costs in the baseline and the costs under the proposed provisions. As previously mentioned, the only change in costs due to the new regulation would be related to reporting, review, and approval. No change in the substance of requirements for HPHT and NUT equipment and operations is anticipated.

Table 7 estimates costs by report type under the two scenarios. The costs to Government are calculated by multiplying the number of report activities in the next 10 years by the cost to Government per report, which is the wage cost less the cost-recovery report submission fee. The costs to industry are calculated by multiplying the number of report activities in the next 10 years by the cost to industry per report, which is the wage cost plus the report submission fee. Total costs are estimated by adding industry and Government costs. The baseline costs are estimated at $37.8 million over 10 years (undiscounted). The costs of the proposed rule provisions are estimated at $67.1 million over 10 years. The costs of this rule, which is the difference between these two costs, is estimated at $29.0 million over 10 years.

Table 7: 10-Year Costs (Undiscounted) of Proposed Rule , 2021–2030

Cost by Activity	Report Activity	Report Submission Fee	Wage Cost to Gov't per Report	Total (Non-recoverable) Cost to Gov't	Wage Cost to Industry per Report	Total Cost to Industry	Total Costs
	A	B	C	D = A x (C - B)	E	F = A x (E + B)	G = D + F
Conceptual Plan (Not Involving HPHT)	70	$2,510	$3,665	$80,822	$4,722	$506,211	$587,033
Conceptual Plan (Involving HPHT – Includes I3P Reports)	94	$78,568	$114,709	$3,397,281	$165,256	$22,919,417	$26,316,698
DWOP (all)	50	$13,907	$20,304	$319,861	$25,024	$1,946,571	$2,266,432
DWOP Revision for Equipment Change (All)*	312	$8,959	$13,080	$1,285,796	$15,581	$7,656,555	$8,942,351
Baseline Total				**$5,083,760**		**$33,028,754**	**$38,112,514**
(i) Project Conceptual Plan	78	$2,510	$3,665	$90,059	$4,722	$564,064	$654,123
(ii) NUT Conceptual Plan	100	$32,611	$47,612	$1,500,106	$67,613	$10,022,414	$11,522,520
(iii) NUT Barrier Conceptual Plan	130	$71,570	$104,492	$4,279,886	$227,363	$38,861,241	$43,141,127
(iv) DWOP	50	$13,907	$20,304	$319,861	$25,024	$1,946,571	$2,266,432
(v) Supplemental DWOP	312	$8,959	$13,080	$1,285,796	$15,581	$7,656,555	$8,942,351
NUT Failure Report**	18	N/A	$9,229	$166,116	$23,608	$424,943	$591,059
Proposed Total				**$7,641,823**		**$59,475,787**	**$67,117,611**
Difference				**$2,558,064**		**$26,447,033**	**$29,005,097**

* Revision that would require a supplemental submission under the proposed rule.

Table 8 presents the estimated annual and total costs as a result of the proposed rule provisions and assumes the reports will be distributed equally over the 10-year time horizon. As can be seen in the table, aggregate costs over the 10-year period total $24.7 million discounted to 2020 at 3 percent and $20.4 million discounted at 7 percent.

Table 8: Total 10-Year Costs Associated with Proposed Rule

	Discounted at 3%	Discounted at 7%
Total	$24,741,936	$20,371,966
Annualized	$2,900,510	$2,900,510

IV. BENEFITS OF THE PROPOSED RULE

This proposed rule would provide regulatory certainty to all stakeholders regarding BSEE review of HPHT plans by clarifying requirements for plan submission and content. With more clarity about requirements, designs and submissions would be less likely to need revisions or supplemental information. I3P verification of plans would promote BSEE's understanding of novel or complex technologies, and enhanced I3P verification process and reporting requirements for NUT failure would give BSEE improved understanding of reliability and possible causes of failure. In addition to supplementing BSEE's understanding, the I3P provisions would streamline and standardize BSEE's review and operators' submissions. These benefits have not been quantified because no relevant data are available, and a quantification of the benefits would be too uncertain.

V. NET BENEFITS

This proposed rule would provide regulatory certainty to all stakeholders regarding BSEE review of HPHT projects. It would clarify the DWOP process and codify existing BSEE policy and guidance (NTLs) for the submission and contents of related plans for development and operations in HPHT environments or employing new or unusual technology. It would clarify and expand requirements for I3P reporting associated with submitted plans; having I3P analysis and verification would improve BSEE's understanding of new and complex technologies presented in submitted plans. In addition to supplementing BSEE's understanding, the I3P provisions would streamline and standardize operators' submissions and BSEE's review. These are appreciable benefits relating to the regulation of development and operations in HPHT environments.

This IRIA estimates the increased costs for industry and government relating to the enhanced plan preparation and submission requirements. The annualized costs associated with this proposed rule are $2.9 million discounted at 3% or 7%. The costs are deemed to be justified by the benefits that would be associated with the proposed rule.

VI. INITIAL REGULATORY FLEXIBILITY ANALYSIS

The Regulatory Flexibility Act, 5 U.S.C. § 601-612, requires agencies to analyze the economic impact of regulations when there is likely to be a significant economic impact on a substantial number of small entities and to consider regulatory alternatives that will achieve the agency's goals while minimizing the burden on small entities. Section 605 of the Regulatory Flexibility Act allows an agency to certify a rule, in lieu of preparing an analysis, if the regulation will not have a significant economic impact on a substantial number of small entities. Further, the Small Business Regulatory Enforcement Fairness Act of 1996, Pub. L. 104-121, (March 29, 1996), as amended, requires agencies to produce compliance guidance for small entities if the rule has a significant economic impact on a substantial number of small entities. This proposed rule is not expected to have a significant economic impact on small entities. However, for completeness, BSEE has prepared an initial regulatory flexibility analysis for this proposed rule.

VI.A Description of the Reasons Why Action by the Agency Is Being Considered

Operations in HPHT environments are relatively new on the U.S. OCS. These operations require the use of equipment that exists at the limits of current technology. Due to limited industry experience in HPHT environments, there are few standards that directly address HPHT equipment and operations, requiring BSEE's careful case-by-case review of HPHT projects. This proposed rule implements clear and consistent standards in this area and thereby provides regulatory certainty to all stakeholders.

VI.B Succinct Statement of the Objectives of, and Legal Basis for, the Proposed Rule

BSEE regulates offshore oil and gas operations conducted on the OCS and seeks to improve safety and mitigate risks associated with offshore exploration, production, and development (See 43 U.S.C. 1347-1348; 30 CFR 250.101). BSEE's regulatory program covers a wide range of facilities and activities, including drilling, completion, workover, production, pipeline, and decommissioning operations. Drilling, completion, workover, and decommissioning operations are types of well operations that offshore operators perform on the OCS. This proposed rule covers applicable projects, processes, and equipment used for these operations.

VI.C Description of and, Where Feasible, an Estimate of the Number of Small Entities to Which the Rule Will Apply

A small entity, as defined by the Regulatory Flexibility Act, consists of small businesses, small not-for-profit organizations, and small governmental jurisdictions. We have identified no small not-for-profit organizations or governmental jurisdictions that the rule will impact, so this analysis focuses on impacts to small businesses (hereafter referred to as "small entities"). The definition of small business varies from industry to industry to reflect industry size differences. The proposed rule affects companies applying for DWOP and operating in HPHT environments. BSEE's analysis shows that this includes roughly 23 companies, of which approximately 12 (52

percent) of the potentially impacted businesses are considered small; the rest are considered large businesses. All of the operating businesses meeting the U.S. Small Business Administration classification are potentially impacted; therefore, BSEE expects that the rule may affect a substantial number of small entities. However, it is also observed that the estimated 12 small companies active on the OCS are a minor share of all companies in NAICS code "2111: Oil and Gas Extraction."

VI.D Description of the Projected Reporting, Recordkeeping, and Other Compliance Requirements of the Rule

The proposed revisions will result in increased costs to firms from HPHT and NUT reporting requirements, particularly from mandatory I3P nominations and reports. BSEE has evaluated quantifiable costs and benefits and has estimated that there are quantified costs to industry from the provisions.

To determine the magnitude of the cost to small entities associated with the proposed rule, BSEE estimated the share of costs to be borne by small businesses. BSEE assumes that both the costs associated with this proposed rule and the revenue earned by affected firms are similarly related to the underlying economic activity, and that therefore the industry cost share for small business is proportional to the industry revenue share for small businesses.

Revenues by firm size were estimated by applying Census Statistics of U.S. Businesses revenue estimates[4] for NAICS code "2111: Oil and Gas Extraction" by employment ranges to each impacted operator. This analysis of revenue indicates that small companies will earn 8 percent of the industry revenue from this rule and large companies will earn the remaining 92 percent, as indicated in Table 9. These revenue shares by company size were then applied to the total industry costs (both industry costs for preparing reports and cost recovery fees for submitting them) associated with the proposed rule, and the ratio of costs to revenue was calculated. The new reporting costs that would be imposed on small entities by the new HPHT requirements are not significant, at 0.006 percent of revenue.

Table 9: Industry Revenue, Cost and Relative Cost by Operator Size (Undiscounted Annualized $)

Company Size	Annual Revenue	Percent of Revenues	Industry Rule costs	Industry Cost relative to Revenue
Small Companies	$3,402,292,053	8%	$169,977	0.006%
Large Companies	$39,105,059,852	92%	$1,954,737	0.006%
Total	$42,507,351,905	100%	$2,124,715	0.006%

[4] Obtained from https://www.census.gov/data/tables/2017/econ/susb/2017-susb-annual.html.

VI.E Identification of All Relevant Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rule

BSEE does not project that the proposed rule would conflict with any relevant Federal rules or duplicate or overlap with any Federal rules in any way that would unnecessarily add cumulative regulatory burdens on small entities without any gain in regulatory benefits.

VII. UMRA ANALYSIS

This proposed rule would not impose an unfunded Federal mandate on State, local, or Tribal governments, or the private sector of more than $160 million per year. This rule would not have a significant or unique effect on State, local, or Tribal governments or the private sector. Thus, BSEE estimates that an UMRA statement is not required.

VIII. EFFECTS ON THE NATION'S ENERGY SUPPLY (EO 13211)

Under EO 13211 (66 FR 28355, May 22, 2001), agencies are required to prepare and submit to OMB a Statement of Energy Effects for significant energy actions. This should include a detailed statement of any adverse effects on energy supply, distribution, or use (including a shortfall in supply, price increases, and increased use of foreign supplies) expected to result from the action and a discussion of reasonable alternatives and their effects. BSEE's analysis indicates that the proposed rule would not add any new regulatory compliance requirements that would lead to adverse effects on the Nation's energy supply, distribution, or use.