Safety Management System (SMS) Considerations for Renewable Energy Projects on the OCS

Stanislaus Kaczmarek

Chief, Safety and Environmental Management Systems Section
Office of Offshore Regulatory Programs
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“To promote safety, protect the environment and conserve resources offshore through vigorous regulatory oversight and enforcement.”
Outline

- SMS requirement
- Anticipated risks
- SMS guidance
- Role of standards in the SMS
- Need for industry-led standards development / expansions
Regulations: 30 CFR Part 585, Subpart H

Environmental / Safety Mgt, Inspections, and Facility Assessments

- § 585.810
  - What must be included in a Safety Management System?

- § 585.811
  - When must the Safety Management System be followed?

- § 585.820
  - DOI will inspect OCS facilities and any vessels engaged in authorized activities

- § 585.821
  - DOI will conduct scheduled and unscheduled inspections

- § 585.824
  - Annual self-inspection plan and reporting requirements
Safety Management System (SMS) Requirements

30 CFR 585.810-811

- SMS is required by all entities performing OCS renewable energy activities (*definition of “You”*)
  - lessee,
  - operator (or designated operator),
  - ROW (right of way) grant holder,
  - RUE (right of use and easement) grant holder,
  - alternate use RUE grant holder,
  - designated agents of any of these, and
  - contractors and subcontractors to any of these entities

- Primary SMS goal is to ensure safety on or near your facilities

- SMS must be “fully functional” when operations begin
OCS Renewable Energy Risks

Examples

- confined space
- contractor management
- corrosion monitoring and management
- drone risk (UAV) (underwater and aerial)
- dropped objects
- electrical safety
- emergency response (especially regarding marine coordination and coordination among first responders such as U.S. Coast Guard)

- fire hazards, maintenance of fire extinguishers and/or fire extinguishing systems, inspection frequency
- personnel fitness to work
- hazardous gas emissions
- hot work
- incident reporting
- lifting and crane operations (including multi-crane and critical lifts)
- man overboard
OCS Renewable Energy Risks

Examples

- medical evacuation equipment and procedures
- medical facility requirements (what staff capabilities are needed and where)
- oil spills
- permit-to-work activities (for hazardous activities such as hot work or working at heights)
- personal safety (including ergonomic hazards; slip, trip, and fall hazards; and personal protective equipment (PPE) controls)
- personnel communication and coordination
- physical security of the asset (as well as North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) cybersecurity)
- service lifts and inspection requirements
- simultaneous operations
- subsea anomalies (e.g., unexploded ordnances)
OCS Renewable Energy Risks

Examples

- tool and equipment ratings
- towing
- vessel encroachment and marine coordination (including vessel collisions and allisions)
- vessel transfer
- weather and severe weather
- working alone including communication and emergency response mechanisms
- working at heights, fall protection, fall rescue
- working under load
The SMS defines how “you” will ensure safety

DOI HSE/SMS Guidance under development

- DOI Regulatory Authority
- Risks and Performance-based Regulation
- SMS Requirements and Guidance
- Role and Availability of Standards
- Demonstrating a Functional SMS
- Monitoring and Reporting
The SMS defines how “you” will ensure safety

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Focus today

HEALTH, SAFETY AND ENVIRONMENTAL (HSE) MANAGEMENT
GUIDANCE FOR RENEWABLE ENERGY COMPANIES
Standards to be considered / adapted within the SMS

Consensus-based preferred over home-grown approaches

- One standard is incorporated by reference in the 585 regs
  - API RP 2A on Fixed Offshore Platforms
- Other standard categories to be considered
  - Design of an SMS Framework
  - Design and Operation of Wind Turbines
  - Lifting and Dropped Objects
  - Electrical Safety
  - Fitness to Work
  - Simultaneous Operations
  - Human Factors Engineering
  - Prevention Through Design
  - Managing Asset Design and Integrity
Three expectations from adopting standards within SMS … each will be monitored by DOI/BSEE differently

▪ Design out the risk
  o Primary oversight mechanism: Certified Verification Agent (CVA)

▪ Design in safety components
  o Primary oversight mechanism: self and BSEE-led Inspections

▪ Create and utilize safety and environmental controls
  o Primary oversight mechanism: SMS audits (self, 3rd-party, BSEE-led)
SMS Component Considerations

Examples

- **SMS Standards**
  - ISO 45001, *Occupational health and safety management systems*
  - ANSI Z10, *Occupational health and safety management systems*
  - API RP 75, *Recommended Practice for a Safety and Environmental Management System for Offshore Operations and Assets*
SMS Component Considerations

Examples

- **Design Standards**
  - EN 50308, *Wind Turbines – Protective Measures – Requirements for design, operation, and maintenance*
  - AWEA OCRP-2012, *Recommended Practice for Design, Deployment, and Operation of Offshore Wind Turbines in the U.S.*
  - ASME A17.8, *Standard for wind turbine tower elevators*
SMS Component Considerations

Examples

- **US Coast Guard Standards**
  - *Means of Escape* (33 CFR 143.101)
  - *Personnel Landings* (33 CFR 143.105)
  - *Guards and Rails* (33 CFR 143.110)
SMS Component Considerations

Examples

- **Lifting Standards**
  - API RP 2D, *Operation and Maintenance of Offshore Cranes*
  - OE-GL-01 – *Guideline and Recommended Practice – Planning and Execution of WTG Lifting Operations*
  - OE-RP-01 – *Recommended Practice – Design of Lifting, Transport, Storage and Accessory Equipment*
  - OE-RP-02 – *Recommended Practice – Vessel Access Aligned Interfaces*
  - DROPS: *Dropped Objects Prevention Scheme*
SMS Component Considerations

Examples

- Electric Standards
  - National Fire Protection Association (NFPA) 70 series
  - OSHA 29 CFR Parts 1910 and 1926 (*Lock Out Tag Out [LOTO]*)
  - Renewable UK Wind Turbine Safety Rules
SMS Component Considerations

Examples

- Miscellaneous
  - International Marine Contractors Association (IMCA) M203, Guidance on Simultaneous Operations (SIMOPS)
  - Renewable UK RUK13-001-6, Offshore Wind and Marine Energy Health and Safety Guidelines, Section A.10
Conclusions

The path ahead

▪ Experience from the oil and gas sector can influence the safety of US OCS renewable energy operations

▪ International experience and standards gain primacy when US standards are unavailable or lacking

▪ DOI/BSEE as the regulator will push for safest applications

▪ Future presentations… more details on the DOI HSE Guidelines
Questions?

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