

GAP ANALYSIS: API RP 75 AND THE IADC HSE CASE GUIDELINES

API RP 75 SECTION [3RD ED MAY 2004]	REQUIREMENT	HSE CASE GUIDELINES REF.
Section 1 General		
1.1 PURPOSE AND OBJECTIVE		1.1
1.1.1 Owners and Operators	API RP 75 to assist owners and operators in the development of a Safety and Environmental Management System to promote safety and environmental protection during offshore oil and gas operations	1.1
1.1.2 Contractors	Contractors should be familiar with operator's SEMP and should have safety and environmental policies and practices consistent with operator's SEMP. A bridging document may be utilized to manage operations	2.3.12.1
1.2 MANAGEMENT PRGM ELEMENTS AND PRINCIPLES		
1.2.1 Management Program Elements	The program elements address eleven (11) areas.	[List 2.0.1]
	a. Safety and environmental information	2.3.6 , 2.3.7,2.3.8
	b. Hazards analysis	2.3.1
	c. Management of Change	2.3.2
	d. Operating Procedure	2.3.8, See also MODU Code Chpt 14
	e. Safe work practices	2.3.5
	f. Training	2.2.4.4
	g. Quality & mech integrity of critical equipment	2.3.19
	h. Pre-start up review	2.3.2
	i. Emergency response and control	2.3.3
	j. Investigation of incidents	2.4.2
	k. Audit of SEMP elements	2.4.5
	l. Documentation and record keeping	2.2.1.2, (2.6)
1.2.2 Principles	This RP is based on the following principles:	
	a. Management responsible for overall success of SEMP	2.0, 2.2.2.1
	b. Management provides leadership to establish goals and performance measures	2.0

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	c. Management appoints representatives responsible for establishing, implementing and maintaining SEMP.	2.2.2.1, 2.2.2.2, 2.2.2.3
	d. Management designates representatives responsible to report SEMP performance	2.2.2.1
	e. Management reviews SEMP on interval basis for suitability and effectiveness with the view of addressing and documenting needed changes	1.2.5, 2.5.1
	f. Management develops written SEMP policies and organizational structure with defined responsibilities	2.2.1, 2.2.2
	g. Management utilizes personnel expertise for hazard identification, environmental impact, safe work practices, training programs and incident investigations.	4.3
	h. Owner, operator and contractor all have own responsibility to protect personnel and the environment	2.2.2
	i. Facility is designed, constructed, operated and maintained per applicable codes, standards, accepted practices and compliant with government regulations	3.1.2, 3.1.4, 3.2.1, 3.2.2
	j. Management of safety hazards and environmental impacts integral part of facility	3.0
	k. Suitably trained personnel are employed	2.2.4
	l. Periodic audits to maintain SEMP and ensure effective performance	2.4.5, 6.4
	m. Safety and environmental management enhances performance, protects personnel and property, and the environment by reducing the probability and severity of uncontrolled releases and undesirable events	2.0
	n. Human factors considered in design and implementation of SEMP	2.3.1, 2.3.8, 4.7.2
1.2.3 Setting Objectives and Goals	Management is responsible for establishing safety and environmental goals and performance measures	2.1.1, 2.2.2
1.2.4 Communication	Management is responsible for establishing procedures for both internal and external communications	3.4.6, 4.9.2, 5.2.3

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1.3 SCOPE		
1.3.1 Applications		
1.3.1.1	Offshore oil, gas and sulphur facilities that include well drilling, servicing, production and operations.	4.9.1
1.3.1.2	Operator established and maintains procedure to identify environmental impacts of its activities that it can control and have an influence in order to determine those expected to or can have impacts on environment.	2.3.6, 4.4
1.3.1.3	Toxic substances sometimes handled in OCS operations include H ₂ S, CL ₂ , and NH ₃	4.4
1.3.1.4	Other materials handled in offshore operations (i.e., steam, hot water, certain chemicals, heat transfer fluids, etc) may constitute a safety or environmental hazard if released.	4.4
1.4 DEFINITIONS	(Appendix D)	Append 2
1.5 STANDARDS, REGULATIONS AND REFERENCES		Append 1 & 4
1.5.1 Industry Codes, Practices, and Standards	Useful in design, fabrication, installation, layout, operation, inspection, testing and maintenance of facilities (Listed in Appendix B)	Append 1
1.5.2 Government Codes, Rules, Conventions and Regulations	Federal, State, municipal and local established requirements may influence design, fabrication, installation, layout, operation, inspection, testing and maintenance of facilities.	Append 4
1.5.3 References	A partial list of references (textbooks, references and technical articles) that have substantial acceptance by industry and governmental bodies are listed in Appendix C. (NOTE: <u>not part of RP</u>)	Append 1

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Section 2 SAFETY AND ENVIRONMENTAL INFORMATION		
2.1 GENERAL	The management program should require that a compilation of safety and environmental information be developed and maintained for any facility subject to this RP.	2.3.1, 2.3.6, 2.3.7, 2.3.8, 4.3.1
2.2 PROCESS DESIGN INFO		
2.2.1	The process design info should include, as appropriate, a simplified process flow diagram and acceptable upper and lower limits, where applicable, for items such as temperature, pressure, flow and composition. (see API RP 14J, which on a MODU is only applicable to a production processing system)	NA (For production process); 3.3 (Covers drilling process)
2.2.2	Where original process design info is no longer existent, info may be developed via a hazard analysis in sufficient detail to support the analysis.	2.3.1
2.3 MECHANICAL & FACILITIES DESIGN INFO		
2.3.1	The mechanical design info should include, as appropriate, piping and instrument diagrams, electrical area classifications, equipment arrangement drawings, design basis of the relief system, description of the alarm, shutdown, and interlock systems, description of the well control systems, and design basis and active fire protection features and systems and emergency evacuation procedures.	Append 3, may not be complete
2.3.2	The mechanical and design info for MODUs should conform to the applicable requirements of the flag State and Class Society.	3.1.2
2.3.3	The mechanical and design info should be consistent with applicable consensus codes and standards in effect at the time of design.	3.2.1
2.3.4	When original mechanical design info is no longer existent, suitability of equipment design for intended use should be verified and documented based on engineering analysis and prior operating experience.	2.3.2, 2.3.14
2.3.5	Design and installation of new facilities and major modifications should include consideration of human factors.	2.3.2, 2.3.1.4

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Section 3 HAZARD ANALYSIS		
3.1 APPLICATION	The management program should require that a hazard analysis be performed for any facility subject to this RP.	2.3.1
3.2 METHODOL- OGY		
3.2.1	Hazard analysis should take an orderly, systemic approach, following one or more methodologies such as those recommended in API RP 14J or References 1 and 2.	4.3.2
3.2.2	Hazards Analysis for MODUs <ul style="list-style-type: none"> a. For most MODUs this is implicit in the Flag State and Classification Society certification process. b. It may be necessary to perform site-specific hazard analysis for certain operations to assure the MODU is not exposed to condition beyond its designed limits. 	4.3.2
3.3 INITIAL ANALYSIS		
3.3.1	The hazard analysis should be performed in order of priority: <ul style="list-style-type: none"> a. Areas with continuous offshore population b. Inventory and flow rate of flammable, toxic or other materials that constitute a safety hazard or environmental impact c. Locations involving simultaneous operations d. Facilities that remove natural gas or handle H₂S e. Facilities with severe operating conditions (i.e. high pressure, highly corrosive fluids, high flow rates, etc) f. Facilities in close proximity to environmentally sensitive areas. 	NA (Each MODU develops its own HSE case)
3.3.2	Hazard analysis on new or modified facilities should be given special consideration.	NA (Each MODU develops its own HSE case)
3.4 PERIODIC ANALYSIS	Management should establish a program for updating hazard analyses (i.e. review intervals of five years for high priority facilities and ten years for low priority facilities)	1.2.4, 2.4.1, 6.4

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3.5 ANALYSIS PERSONNEL	Hazard analysis should be performed by person knowledgeable in engineering, operations, design, process, safety, environmental and other specialties as appropriate.	4.3.1
3.6 ANALYSIS REPORT	Findings of hazard analysis should be in a written report, which describes the hazards and the recommended steps to mitigate them (including follow up with a completion report.)	4.9.1

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Section 4 MANAGEMENT OF CHANGE		
4.1 GENERAL	Management program should establish procedures to identify and control hazards associated with change and maintain the accuracy of safety info.	1.2.5, 2.3.2, 2.3.19
4.2 CHANGE IN FACILITIES	Facility change arises whenever the process or mechanical design is altered; or as a result of changes in produced fluids, process additives, product specifications, by-products or waste products, design inventories, instrumentation and control systems, or materials of construction.	1.2.5, 2.3.2
4.3 CHANGE IN PERSONNEL	Change in personnel, including contractor personnel, occurs whenever there is a change in the organization or in personnel that supervise or operate the facility.	1.2.5, 2.3.2
4.4 MANAGING THE CHANGES	The Management program should establish and implement written procedures to manage change in facilities and personnel that are flexible enough to accommodate both major and minor changes.	1.2.5, 2.3.2

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Section 5 OPERATING PROCEDURES		
5.1 GENERAL	The Management program should include requirements for written facility operating procedures designed to enhance efficient, safe, and environmentally sound operations. Operating procedures, by design, should directly address human factor issues associated with the interaction between facilities and personnel.	2.3.1
5.2 CONTENT OF OPERATING PROCEDURES	<p>Written procedures should include:</p> <ul style="list-style-type: none"> a. Job title and reporting relationship or each person (s) responsible for each operating area b. Instructions for sound operation of each facility that are consistent with safety and environmental information for : startup, normal operations, temporary operations, simultaneous operations, emergency shutdown and isolation and normal shutdown. c. Normal operating limits and, for safety and environmental considerations, the consequences of deviation outside the operating limits, and the steps required for correcting or avoiding a deviation(s) from the operating limits. d. Environmental and occupational safety and health considerations. 	2.3.8
5.3 PERIODIC REVIEW	When changes are made, operating procedures should be reviewed per the management of change procedure. Additionally, periodic reviews, at a frequency to correspond to the degree of hazard, should be undertaken to verify that they reflect the current and actual operating practices.	1.2.5, 2.3.2 6.3

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Section 6 SAFE WORK PRACTICES		
6.1 GENERAL	The Management program should establish and implement safe work practices, which should be designed to minimize the risks associated with operating, maintenance, and modification activities and the handling of materials and substances that could affect safety or the environment, taking into account the human factors. Contractors should have their own safe work practices or may adopt portions of the operator's program. In both cases, an agreement prior to work commencing should be reached.	2.3.5 2.3.12.1
6.2 SAFE CONDUCT OF WORK ACTIVITIES	Safe work practices for all personnel, including contractors, should provide for the safe conduct of operating, maintenance, and modification activities. Specifically, safe work practices should cover: <ul style="list-style-type: none"> a. Opening pressurized or energized equipment or piping b. Lock out and tag out of electrical and mechanical energy sources c. Hot work or other ignition source work d. Confined space entry e. Crane operations 	4.1.1 2.3.15
6.3 CONTROL OF HAZARDOUS MATERIALS	Materials specifications, inventories, separation, confinement, and handling of toxic or hazmat that can affect safety or environmental protection should be determined, documented, and communicated to appropriate personnel.	3.4.10
6.4 CONTRACTOR SELECTION	During contractor selection, operators should obtain and evaluate info regarding a contractor's safety and environmental management policies and practices, and performance there under (Ref: API RP 76).	2.2.4

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Section 7 TRAINING		
7.1 GENERAL	The Management program should establish and implement training programs so that all personnel are trained to work safely and are aware of the environmental considerations offshore, IAW their duties and responsibilities. Training should address operating procedures (Section 5), safe work practices(Section 6), and the emergency response and control measures(Section 10)	2.2.4
7.2 INITIAL	TRAINING	
7.2.1	Certain training elements should be provided for the basic well-being of personnel and the protection of the environment. For example: <ul style="list-style-type: none"> a. Orientation training b. Non-operating emergencies (i.e., rescue and fire-fighting) c. Circumstantial training (i.e. hotwork, confined space entry, lockout/tagout) d. For applicable government regulations 	2.2.4.4, 2.2.4.5
7.2.2	Qualification criteria should be developed and implemented for operating and maintenance personnel, as applicable, to ensure they possess the required knowledge and skills to carry out their assigned duties and responsibilities, including start up and shutdown.	2.2.4.3, 4.7.3
7.3 PERIODIC TRAINING	Refresher training should be provided to maintain understanding and adherence to current operating procedures. Periodic drills should be established to verify retention of required knowledge and skills.	2.2.4.5, 5.3.2
7.4 COMMUNICA- TION	The Management program should require personnel to be trained or otherwise informed before they are expected to operate the facility when changes are made in operating procedures (Section 5), safe work practices (Section 6), or the emergency response and control measures (Section 10).	2.3.2
7.5 CONTRACT- OR TRAINING	Contractors should train their personnel in the work practices necessary to perform their jobs in a safe and environmentally sound manner. Training should include site-specific safety and environmental procedures and applicable provisions of the emergency action plans. Incidental service contractors (i.e., janitor, food service, etc) should received safety and emergency evacuation training.	2.2.4.4

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Section 8 ASSURANCE OF QUALITY AND MECHANICAL INTEGRITY OF CRITICAL EQUIPMENT

8.1 GENERAL	The Management program should develop and implement procedures so that critical equipment is designed, fabricated, installed, tested, inspected, monitored, and maintained in a manner consistent with service requirements, manufacturer's recommendations, or industry standards.	2.3.19
8.2 PROCUREMENT	Written procedures should be developed for the procurement of critical equipment to verify equipment compliance with applicable design and material specifications.	3.1.5
8.3 FABRICATION	Written quality control procedures and specifications for critical equipment should be established and implemented to confirm materials and construction are in accordance with the design specifications.	2.4.6
8.4 INSTALLATION	Appropriate checks and inspection procedures should be established and implemented before start up to verify the installation of critical equipment is consistent with design specs and manufacturer's instructions.	6.5
8.5 MAINTENANCE	Maintenance programs that include appropriate inspection and testing should be established and implemented for critical equipment to sustain ongoing mechanical integrity.	2.3.19
8.6 TESTING AND INSPECTION	<p>Testing, inspection, calibration and monitoring programs for critical equipment should be established. These programs should include:</p> <ol style="list-style-type: none"> a. A list of critical equipment b. Testing and inspection procedures c. Documentation of completed testing and inspections d. Procedures to document and correct critical equipment deficiencies or operations outside acceptable limits. e. A system for reviewing and authorizing changes in tests and inspections f. Auditing procedures to ensure compliance with program. 	6.5

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Section 9 PRE-START UP REVIEW

9.1 GENERAL

The Management program should require that the commissioning process include a pre-startup safety and environmental review for new and significantly modified facilities. Criteria requirements are:

- a. Construction and equipment within specifications
- b. Safety, environmental, operating, maintenance and emergency procedures are in place
- c. Safety and environmental info is current
- d. Hazard analysis recommendations have been considered and implemented
- e. Operating personnel training completed
- f. Program to address management of change process in place
- g. Safe work practices in place

2.3.2,
 (MODUs
 review their
 safety case
 with each
 operator to
 establish a
 bridging
 document
 prior to each
 well)

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Section 10 EMERGENCY RESPONSE AND CONTROL		
10.1 GENERAL	The Management program should require that the emergency response and control plans are in place and ready for immediate implementation. Plans to be validated by drills, which should address personnel readiness and their interaction with the equipment.	2.3.3, 5.1.3, 5.2.2
10.2 EMERGENCY ACTION PLAN	Written action plans should be established to assign authority to the appropriately qualified person(s) for initiating effective emergency response and control.	5.1.3, 5.2.1
10.3 EMERGENCY CONTROL CENTER	An emergency control center (s) should be designated for each facility and include: <ul style="list-style-type: none"> <li>a. Emergency action plans that address: 1) spills of hazardous substance, 2) collision, and 3) fire and/or blowouts <li>b. Oil spill contingency plan <li>c. Safety and environmental info (Section 2) 	5.2.1 2.3.6
10.4 TRAINING AND DRILLS	Training incorporating emergency response and evacuation procedures should be conducted periodically for all personnel (including contractors). Drill based on realistic scenarios should be conducted periodically to exercise elements or the area emergency action plan.	5.3.1, 5.3.2, 5.3.3, 5.5.1, 5.5.2

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Section 11 INVESTIGATION OF ACCIDENTS		
11.1 GENERAL	The Management program should establish procedures for investigation of all incidents with serious safety or environmental consequences. A corrective action program should be established based on the findings of the investigation.	2.4.2, 6.3.1
11.2 INVESTIGATION	The investigation of an incident should include: <ul style="list-style-type: none"> a. The nature of the incident b. The factors (human or other) that contributed to the initiation or escalation of the incident c. Recommended changes identified 	6.3.1
11.3 FOLLOW UP		6.3.1
11.3.1	The investigation findings should be retained for 2 years for possible use in next hazard analysis update.	No specified time period; will need to be addressed for RP75
11.3.2	Management should establish a system to determine and document response to each finding to ensure agree-upon actions are completed	6.3.1
11.3.3	Companies should implement system whereby conclusions of investigations are distributed to similar facilities and/or appropriate personnel	4.9.2, 6.3.1

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Section 12 AUDIT OF SAFETY AND ENVIRONMENTAL MANAGEMENT PROGRAM ELEMENTS

12.1 GENERAL	The operators (and contactors with SEMP's) should establish and maintain an audit program with procedures for periodic audits of the safety and environmental management program to determine proper implementation and maintenance of program elements.	2.4.5, 6.4
12.2 SCOPE	<p>The scope of the audit should:</p> <ul style="list-style-type: none"> a. Determine if program elements are in place b. Determine if program elements incorporate the required components c. Test the system to evaluate the program including a review of records and documentation. d. Identify areas of potential program improvement 	6.4
12.3 AUDIT COVERAGE	Facility audit selection should consider common features (i.e., field supervisors, regulatory districts, facility design, systems and equipment, office management, etc) to obtain a cross section of practices for the facilities operated.	NA (one facility for each HSE Case)
12.AUDIT PLAN	<p>A written plan should be developed that is designed to be flexible in order to permit change based on audit information gathered and also permit effective use of resources. The plan should include:</p> <ul style="list-style-type: none"> a. Objectives and scope b. Audit criteria c. Identification of audit team d. Identification of facilities to be audited e. Identification of program elements to be audited f. Procedures to be used in the audit g. Confidentiality requirements h. Report contents and format with expected date of issue and planned distribution. 	6.4

12.5 AUDIT FREQUENCY	The first audit should be accomplished within 2 years of initial management program implementation. Audit intervals should not exceed 4 years.	No finite timeframe specified. However, ISM Code has dedicated frequencies of 1 yr and 5 yr audits required
12.6 AUDIT TEAM	Personnel from within/without the organization may be used. The audit should be conducted by one or more persons knowledgeable in the process involved and other specialties as necessary.	6.4, 6.5
12.7 AUDIT REPORT	An audit report should be prepared that addresses topics in the audit plan. The report will contain the findings and be signed and dated by the team.	6.4

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Section 13 RECORDS AND DOCUMENTATION		
13.1 GENERAL	A documentation system for the safety and environmental management program should be established to ensure that records and documents are maintained in a manner sufficient to implement the management system. All records should be dated and readily identifiable.	2.2.1.2, 2.6
13.2 DOCUMENTATION	Various elements of the safety and environmental management program identify documentation requirements. Documentation should be sufficient to describe the core elements of the program and the interaction between the elements.	2.2.1.1
13.3 RECORDS	Examples of records that should be maintained are:	2.6
	i. Info on applicable regulations or other info	1.2.5, 6.6
	j. Complaint records	Not addressed
	k. Training records	2.2.4.4
	l. Process information	2.3.8
	m. Product information	2.3.18
	n. Inspection, maint. & calibration records	2.3.19, 2.4.4
	o. Pertinent contractor and supplier info	2.3.12.1
	p. Incident report	6.3.1
	q. Info on emergency prep and response	2.3.3, 5.2.1
	r. Info on significant environmental aspects	2.3.6
	s. Audit results	6.4
	t. Management reviews	2.2.3.1, 2.5.1
13.4 RELATED DOCUMENTATION	Examples of related documentation are:	
	a. Organizational charts	2.2.1.1, 2.2.1.4
	b. Internal standards	2.0.5
	c. Operational procedures	2.3.19
	d. Site emergency response plan	2.3.3
	e. Site emergency evacuation plan	2.3.3
	f. Oil spill response plan	2.3.6
13.5 RECORD AND DOCUMENT CONTROL	The operator should consider establishing and maintaining procedures for controlling records and documents pertaining to SEMP.	2.2.1.2

Appendix A	Contractor selection criteria	2.2.4.2, may need to be modified
Appendix B	Industry Codes, Practices and Standards	Append 1
Appendix C	References	Append 1- needs comparison with RP75
Appendix D	Definitions	Append 2- needs comparison with RP75
Appendix E	Performance Measures	Not fully addressed; Needs to be addressed separately for RP75