Appendix M

Fuel Transfer Plan

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	Shell Exploration & Production Company	**Number:**
	Operations Procedure	Custodian: Alaska Logistics
	ALASKA FUEL TRANSFER PROCEDURE	Revision: B Effective: 7th April 2011

OPERATIONS STANDARD

Approval

Approved for the Alaska Asset:

Shell Exploration & Production Company	Signature	Date
Karen Spring Alaska Logistics Lead	*Approved*	*7th April 2011*
Brent Ross Alaska Operations Manager	*Approved*	*7th April 2011*

*** Note * Original signed copy of this procedure is filed**

Effective

21st July 2009

Compliance Date

7th April 2011

Expires

Remains in effect until superceded or revised

Custodian

Logistics Department, Alaska Venture

Author(s)

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1. Introduction

1.1. Purpose

This document establishes operating criteria to ensure that fuel transfers between vessel-to-vessel, vessel-to-MODU and dock-to-vessel conducted as part of Shell Upstream America's (UA) operations in the Alaskan Venture fully comply with port state regulations as well as Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE) requirements, including the use of booming vessels engaged in fuel oil transfer operations. This document will be applicable to UA operations in Canadian waters as well as any other fuel transfer operations in Alaskan waters.

As fuel transfer operations present an elevated risk of fuel spills and potential environmental damage, it is imperative that transfer operations are conducted safely and that adequate response equipment is in place to provide for containment and recovery of any spilled fuel.

The Lease Stipulations for Oil and Gas Lease Sale 193 in the Chukchi Sea (February 6, 2008) include the following provision:

Stipulation No. 6 - Pre-Booming Requirements for Fuel Transfers . Fuel transfers (excluding gasoline transfers) of 100 barrels or more will require pre-booming of the fuel barge(s). The fuel barge must be surrounded by an oil-spill-containment boom during the entire transfer operation to help reduce any adverse effects from a fuel spill. The lessee's oil-spill-response plans must include procedures for the pre-transfer booming of the fuel barge(s).

1.2. Applicability

This document will be applicable to all UA vessels operating in the Chukchi Sea, US Beaufort Sea and the Canadian Beaufort Sea as well as any other fuel transfer operations involving UA contracted vessels in Alaskan waters.

1.3. Contingency Response Team (CRT)

The Contingency Response Team (CRT) is an UA assemblage of vessel and oil spill response assets including specifically trained individuals. In support of drilling operations this team will attend all fuel transfers that occur in the Chukchi and Beaufort Seas. This team will provide appropriate material and manpower as required by this document and their operating procedures.

When a vessel is engaged in fuel transfer operations in areas other than the Chukchi and Beaufort Seas but under contract to the Alaskan Venture, the appropriate local, state and federal fuel transfer regulations shall be followed with the addition that all vessels receiving or transferring fuel oil will be pre-boomed by the local facilities.

For all fuel oil transfers within the Alaskan Venture, booming equipment shall be deployed as required by this document.

1.4. References

All vessels are subject to the appropriate port state control regulations for fuel oil transfers.

Fuel Transfer Operations will comply with

1.4.1. OPS0011 – Marine Transportation Standard
1.4.2. OPS0011 – PR06 – Bulk Transfer Requirements (attached)
1.4.3. OPS0011 – TO.02 – Manual of Permitted Operations (attached)
1.4.4. OPS0055 – Lifting and Hoisting Standard
1.4.5. 33CFR155 – Oil or Hazardous Material Pollution Prevention Regulations
1.4.6. 33CFR156 – Oil or Hazardous Material Transfer Operations
1.4.7. 46CFR35 – Tank Vessel Regulations
1.4.8. Ship to Ship transfer Guide
1.4.9. ISGOTT
1.4.10. Contingency Response Team Procedures

1.5. Responsibility

1.5.1. Primary – the Logistics Department shall be responsible for assuring that this document is provided and that operators are instructed to use this document prior to Fuel Transfer and Pre-Booming operations.

1.5.2. Secondary - Vessel operators are required to perform Fuel Transfer and Pre-Booming Procedures in concurrence with this document.

1.6. Exemptions

Certain vessels will be exempt from pre-booming due to the nature of the vessel's operation. Vessels exempt from pre-booming are required to have booming material in the immediate vicinity of the fuel transfer operation. Examples of vessels exempt from pre-booming are:

1.6.1. Fueling of small work boats (e.g. 34 feet and 47 feet boats) or fast response boats (e.g. zodiacs) either while they are out of the water or while they are stored on a barge, oil spill response vessel (OSRV), or other vessel.

2. Fuel Transfer Operations

2.1. Fuel transfer operations will follow Bulk Transfer Requirements (OPS0011).

2.2. For vessels operating in the Chukchi and Beaufort Seas, the scheduling of fuel transfer operations shall be initiated by the receiving vessel or MODU to UA SIMOPS Coordinator at least 24 hours in advance.

2.3. Scheduling/Notification

2.3.1. The *Simultaneous Operations (SIMOPS) Coordinator* shall:

2.3.1.1. Consider the proposed fuel transfer in the context of other planned operations and vessels in the area of operations,

2.3.1.2. Review the weather forecast and ensure the forecasted weather is favorable for conducting a fuel transfer operation (Reference OPS0011),

2.3.1.3. Coordinate with Logistics Coordinator regarding the scheduling of the fuel transfer, if applicable,

2.3.1.4. Notify the Shell focal points and vessel masters on related vessels and/or rigs involved in the planned fuel transfer. See the "Notification of Planned Fuel Transfer Operation" form in Appendix A of this manual, and

2.3.1.5. Notify Shell Contingency Response Coordinator (Appendix E) of the planned involved fuel transfer,

2.3.1.6. Notify receiving vessels,

2.3.1.7. Notify the USCG Captain of the Port Western Alaska at least four (4) hours in advance of all planned fuel transfers, (See Appendix B: Advance Notification to U.S. Coast Guard - Offshore Fuel Transfer Operation form.) or when in Canada the appropriate authority,

2.3.1.8. Complete the Notification of Planned Fuel Transfer Operation form (in Appendix A). Maintain file of completed forms.

2.4. Preparation for Fuel Transfers:

2.4.1. Fuel transfers that occur in the Chukchi or Beaufort Seas will consist of three operational entities: the transferring vessel, the receiving vessel and the contingency response team.

2.4.2. If a transfer is scheduled between an UA contracted vessel and another party not contracted to UA, the non-UA vessel or facility will provide oil spill response equipment, including containment boom, as per appropriate port state regulations.

2.4.3. Prior to commencement of fueling operations the following measures shall be taken by into account:

Delivery and Receiving vessel:

2.4.3.1. **The volume/quantity to be transferred should be verified and agreed by the responsible person on each vessel including the system of measurement e.g. gallons, m3 or barrels.**

2.4.3.2. Ensure all applicable fuel transfer equipment and procedures specified in 33 CFR 155 and 156 are complied with and the Declaration of Inspection (DOI) (copy in Appendix C) is signed.

2.4.3.3. Verify all pollution prevention equipment is in place, as per Vessel's Shipboard Oil Pollution Emergency Plan (SOPEP).

2.4.3.4. Ensure fuel containment boom, anchors and spill response vessels are deployed as needed.

2.4.3.5. Ensure communications are established between the transfer vessel, receiving vessel and response teams(s).

2.4.3.6. Correct couplings have been identified for the product(s) to be transferred.

2.4.3.7. Slings and lifting points are visually checked and replaced if required (reference OPS0055).

2.4.3.8. Ensure hoses comply with and are lifted as per OPS0011.

2.4.3.9. All valves used in the transfer systems are in good condition.

2.4.3.10. Ensure the person in charge of the operation performs no other duties.

2.4.3.11. Confirm that the prevailing weather conditions (sea state, ice, and winds will not prevent the deployment of spill containment boom and oil recovery vessels from carrying out an effective response in the event of a spill.

2.4.3.12. Ensure oil containment boom, anchors and spill response vessels are deployed as per the applicable boom deployment diagrams provided on the following pages.

2.4.4. Spill Response Equipment:

When a fuel transfer occurs in the Chukchi and US Beaufort Seas and the Shell Contingency Response Group is on station, or the where the equipment is provided by the contractor the following equipment and conditions shall be considered required;

2.4.4.1. The boom deployed shall be suitable for use in the conditions as per the OPA 90 regulations.

2.4.5. Booming Requirements:

2.4.5.1. The oil containment boom shall be placed in a configuration as indicated in configuration 1 or 2.

2.4.5.2. Configuration 1, where the boom is deployed downstream of the transfer operation, will be utilized when:

2.4.5.2.1. The vessels are not moored to one another, or
2.4.5.2.2. When a vessel is required due to specific circumstances to keep the propeller turning while engaged in the fuel transfer operations.

2.4.5.3. Configuration 1 will be utilized as per the CRT's operations manual which will include

:

2.4.5.3.1. Distance boom will be deployed from the vessels (the boom should not be any closer than 20 feet to the closest vessel),

2.4.5.3.2. Type of boom,
2.4.5.3.3. Appropriate boom for the sea and weather conditions
2.4.5.3.4. Management of boom (workboat, anchors, maneuvering, etc)
2.4.5.3.5. Workboats will standby during the entire transfer operation, monitor the boom configuration, and monitor for any product that may enter the water.

2.4.5.4. Configuration 2, where the boom is deployed forward and aft of the manifold between the vessels, will be utilized when:

2.4.5.4.1. The vessels are moored to one another, or
2.4.5.4.2. When a vessel is moored at a dock or facility.

2.4.5.5. Configuration 2 will be utilized as per the CRT's operations manual which will include:

2.4.5.5.1. Type of boom,
2.4.5.5.2. Management of boom (workboat, anchors, maneuvering, etc.)
2.4.5.5.3. Workboats will standby during the entire transfer operation, monitor the boom configuration, and monitor for any product that may enter the water.

2.5. Planning for Fuel Transfer:

When preparing plan for transfer, check shall be made to confirm that adequate stability is maintained on both vessel(s)/MODU.

2.5.1. The transfer operation should be planned and agreed in writing between the two (or three) parties and, where applicable, should include information on the following:

2.5.1.1. Quantity and type of each fuel to be transferred,

2.5.1.2. Number of pumps to be used and maximum pressure,

2.5.1.3. Initial and maximum topping off rates,

2.5.1.4. Notice period of rate change communicated,

2.5.1.5. Normal stopping and emergency shutdown procedures,

2.5.1.6. Emergency and spill containment procedures,

2.5.1.7. Watch or shift change arrangements,

2.5.1.8. Critical stages of operations,

2.5.1.9. Local or government rules that may apply (BOEMRE for UA contracted vessel),

2.5.1.10. Material Safety Data Sheet,

2.5.1.11. Coordination of plans for cargo hose connection, monitoring, draining and disconnection.

2.5.2. Flow rates for various phases of the transfer operation will be discussed and agreed upon prior to beginning transfer operation. If variations in transfer rate become necessary, the receiving vessel shall advise the discharging vessel or facility of its requirements. Similarly, the discharging vessel or facility shall inform the receiving vessel of any variations in flow rates due to its operations.

2.5.3. The receiving vessel will confirm that he will not load any tank to more than 90% capacity.

2.5.4. **Throughout the transfer, at least hourly the transfer rate and quantity will be checked and compared between the two vessels and/or facilities using the same system of measurement (e.g. gallons, m3 or barrels). A log shall be kept.**

2.6. Ice Conditions:

The vessels involved in the fuel transfer will pay particular attention to ice in the vicinity (OPS0011). If necessary, the vessel will maneuver for ice. It may be necessary to release one end of the boom should ice present a hazard. Should this occur, the fuel

transfer operations would be temporarily halted when the boom is released and resume once the boom has been redeployed.

Determining movement of hazardous ice within 3 hours of the fuel transfer operation is essential. Thus if ice is closing in on a vessel's location and the Master deems it to be hazardous, the transfer operations will be halted. A vessel may steam away to extend the arrival of the ice at the vessel.

If the ice is static (not moving), it is not considered hazardous. The containment boom should be able to be or remain deployed with no interference from the ice. Therefore, the transfer operations may continue.

2.7. Termination of Transfer

Any party involved in the fuel transfer operation may stop the fuel transfer operation for safety or environmental reasons.

Fuel transfers should be immediately halted if loss of containment occurs or any of the other following situations develop:

2.7.1. A leaking pipe or hose is discovered,

2.7.2. If the containment boom is deployed, ice hazards may require releasing the boom, preventing effective immediate spill containment,

2.7.3. Vessel moorings (spring and/or breast lines) fail or are not adequately securing the vessels,

2.7.4. Shifting of the transfer vessels locations due to wind or current that cause the containment boom to be compromised,

2.7.5. Increase in other safety or environmental risk factors that become elevated to an unsafe level,

2.7.6. **When recorded transfer rate & quantity reveals is significantly different between the pumping and receiving vessel/MODU.**

2.8. Completion of Transfer

In accordance with previously agreed procedures, after completion of cargo transfer the following operations should be carried out:

2.8.1. All hoses should be drained into the agreed upon tank,

2.8.2. All valves confirmed closed

2.8.3. Hoses should be disconnected and securely blanked,

2.8.4. Cargo manifolds should be securely blanked,

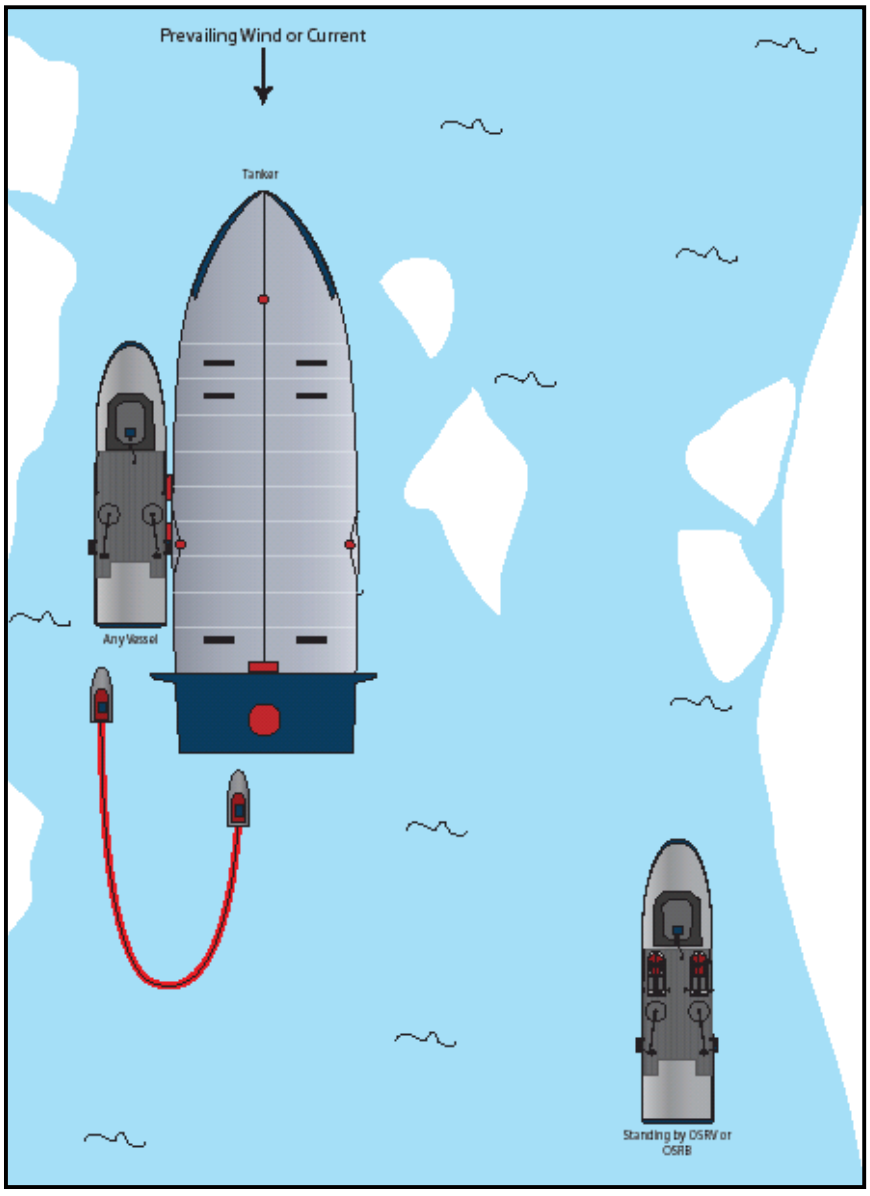
2.8.5. Agreement between vessel and facility as to anticipated time of unmooring or departing the dock.

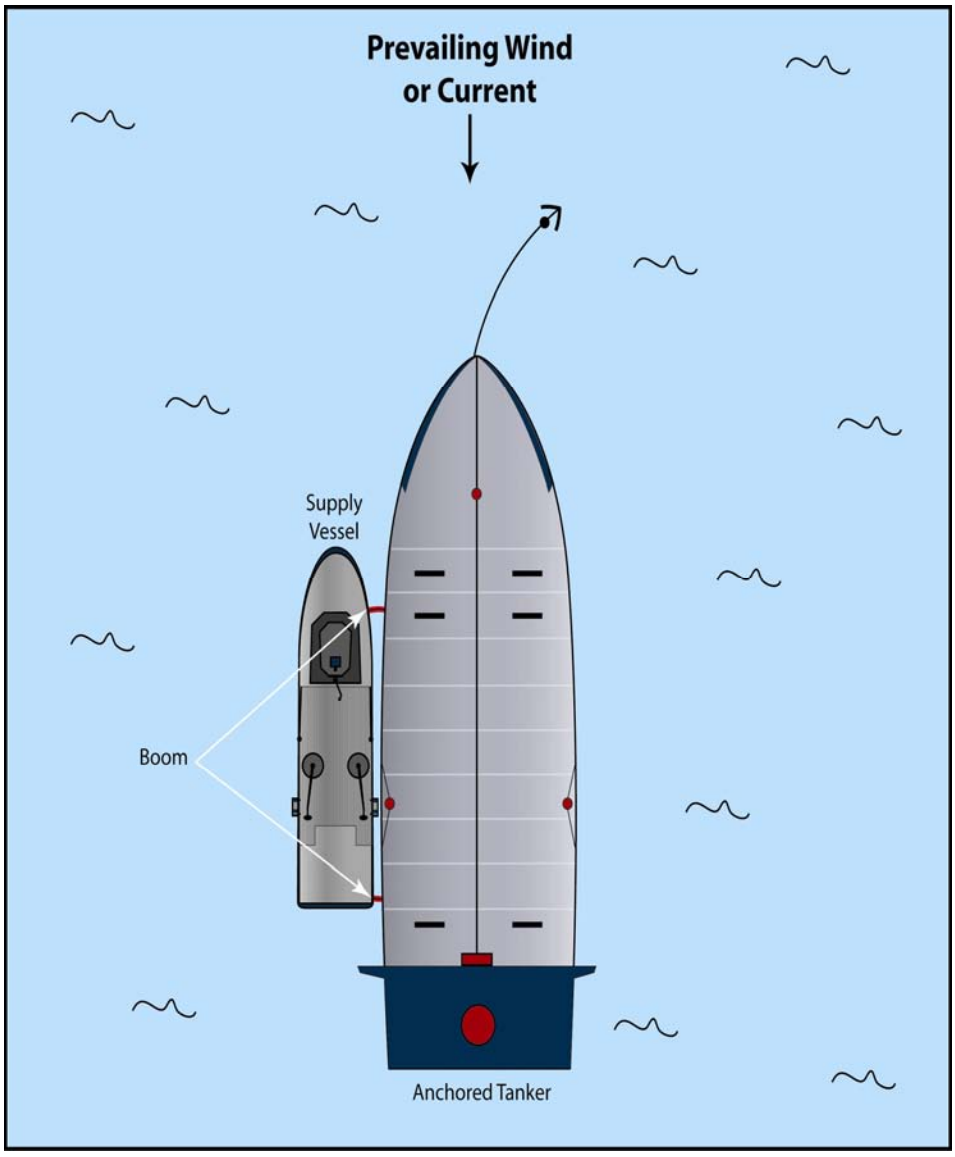
2.9. A copy of the Declaration of Inspection (DOI) completed by the Person in Charge for the delivery vessel and the Person in Charge for the receiving vessel prior to the fuel transfer shall be retained by both the delivering and receiving vessels. When the DOI provided in Appendix B is used a copy of the document shall also be provided to the spill response team.

A vessel may use their Company's Safety Management System DOI as long as the DOI includes all sections included in the attached DOI (Appendix C).

If a contracted vessel and/or fuelling facility utilize their safety management systems' DOI, then the CRT shall complete Appendix E. This document must be addressed and signed by all participating parties.

Configuration 1 and 2





APPENDIX A

Notification of Planned Fuel Transfer Operation

Proposed Date and Time of Fuel Transfer: _____

Receiving Vessel: _____

Delivery Vessel: _____

Estimated Quantity of Fuel: _____gals

Location: _____

Weather Forecast:

_____

_____

Notifications:

Shell Contingency Response Coordinator: _____
Date and Time

Delivery Vessel: _____
Date and Time

Receiving Vessel: _____
Date and Time

Note: U.S. Coast Guard Captain of the Port Western Alaska (4 hrs advance notice) PH: (907) 271-6700, or fax Advance Notification to U. S. Coast Guard - Offshore Fuel Transfer Operation form (Appendix B)

_____	_____	_____
Notification Date and Time	Method: Fax or Call	USCG Point of contact

Instructions: This Notification Form is to be completed by the SIMOPS Coordinator, who maintains a file of completed forms.

APPENDIX B

Advance Notification to U.S. Coast Guard

Offshore Fuel Transfer Operation

U.S. Coast Guard: PH: (907) 271-6700 Fax (907) 271-6751

TO: USCG SECTOR WESTERN ALASKA, ANCHORAGE ALASKA
ATTN: PREVENTION DEPARTMENT

ADVANCE NOTICE OF FUEL TRANSFER

IN ACCORDANCE WITH 33 CFR 156.118

Shell is required by 33 CFR 156.118 to provide Advance Notice not less than four hours prior to a fuel transfer taking place between a supply vessel and receiving vessel or drill rig in Alaskan Waters.

Accordingly, be advised that a fuel transfer is scheduled to take place between the following vessels in the Chukchi and Beaufort Seas as follows:

Date	Estimated Time	Vessels Involved	Location

Notice of transfer submitted by:

Name _____ Phone No: _____

e-mail: _____

APPENDIX C

DECLARATION OF INSPECTION

This document should be completed prior to the transfer of fuel to ensure BOEMRE stipulation 6 of the Oil and Gas Lease Sale 195 and USCG Regulations in 46 CFR 35 and 33 CFR 155 and 156.

DATE	RECEIVING VESSEL	SUPPLYING VESSEL	LOCATION

FUEL TO BE TRANSFERRED: Quantity: _____ Type of Oil: _____

I, _____, the person in charge of the receiving vessel for the transfer of fuel oil in bulk certify I have personally inspected this vessel with respect to the requirements in 46 CFR 35 and 33 CFR 155 and 156 and that opposite each of the applicable items below I have indicated whether the vessel complies with all pertinent regulations by initialing the check off list below.

I, _____, the person in charge of the supplying vessel for the transfer of fuel oil in bulk certify I have personally inspected this vessel with respect to the requirements below set forth in 46 CFR 35 and 33 CFR 155 and 156 and that opposite each of the applicable items below I have indicated whether the vessel complies with all pertinent regulations by initialing the check off list below.

Regulation Citation	Description	Supply Vessel	Receiving Vessel
46 CFR 35.35-30(b)(1)	Warnings displayed (bravo flag; red lights)		
46 CFR 35.35-30(b)(2)	No unauthorized repair work in progress (spark producing or hot work)		
46 CFR 35.35-30(b)(3)	Flanged connections have minimum of 4 bolts; fixed or portable containment in place		
46 CFR 35.35-30(b)(4)	Cargo connections made to receiving vessel and transferring vessel manifold		
46 CFR 35.35-30(b)(5)	No fires or open flames present on deck or in adjacent compartment		
46 CFR 35.35-30(b)(7)	Sea valves connected to cargo piping secured		
46 CFR 35.35-30(b)(8)(9)	Boiler and galley fires if any safely maintained		
46 CFR 35.35-30(b)(10) (11)	Safe smoking areas designated		

46 CFR 35.35-30(b)(12)	Inert gas system being operated, if applicable		
46 CFR 35.35-30(b)(13)	Individual vessel response plans reviewed		
46 CFR 33 CFR 156.120(a)	Moorings are adequate for all expected conditions		
46 CFR 33 CFR 156.120(b)	Hoses have adequate operating envelopes for the given conditions and perimeters		
33 CFR 156.120(c)	Each hose is supported to prevent kinking or other damage to the hose and strain on its coupling.		
33 CFR 156.120(d)	Each part of the transfer system is aligned properly		
33 CFR 156.120(e)	Each part of the transfer system not necessary for the transfer operation is securely blanked or shut off;		
33 CFR 156.120(f)	The end of each hose that is not connected for the transfer of fuel is blanked off using the closure devices required by §§154.520 and 155.805 of 33 CFR		
33 CFR 156.120(g)	The transfer system is attached to a fixed connection on both vessels		
33 CFR 156.120(h)	Each overboard discharge or sea suction valve that is connected to the vessel's transfer or cargo tank system is sealed or lashed in the closed position;		
33 CFR 156.120(i)	Each transfer hose has no unrepaired loose covers, kinks, bulges, soft spots, or any other defect which would permit the discharge of fuel through the hose material and no gouges, cuts, or slashes that penetrate the first layer of hose reinforcement		
33 CFR 156.120(j)	Each hose in use meets 33 CFR 154.500 and 154.510		
33 CFR 156.120(k)	Each connection meets 33 CFR156.130;		
33 CFR 156.120(n)	The discharge containment required by 33 CFR 155.310, and 155.320 as applicable, is in place and periodically drained to provide the required capacity;		
33 CFR 156.120(o)	Each drain and scupper is closed by the mechanical		

	means required by 33 CFR155.310;		
33 CFR 156.120(p)	All connections in the transfer system are leak free;		
33 CFR 156.120(q)	The communications required by 33 CFR154.560 and 155.785 are in place with procedures established and understood.		
33 CFR 156.120(r)	The emergency means of shutdown required by 33 CFR 155.780 is in position and operable;		
33 CFR 156.120(s)	There is a person in charge on each transferring and receiving vessel		
** 33 CFR 156.120 and BOEMRE	The person in charge of transfer operations on the transferring vessel, the person in charge of transfer operations on the receiving vessel and the person in charge of the oil spill response agree to begin the transfer operation;		
33 CFR 156.120(y)	Adequate lighting, including Vessel manifold areas, is provided.		

*** BOEMRE	Communications (2 way) systems tested and ready		
*** BOEMRE	Receiving or delivering vessel boomed		
*** BOEMRE	Boom tending capabilities present and ready to respond		
*** BOEMRE	Contingency Response Group Contacted and on standby		
*** BOEMRE	Ice conditions do not present an impediment to cleanup operations		
*** BOEMRE	Wind and sea conditions do not present an impediment to cleanup operations		

Date and Time of Fueling Operation: Date: _____Start Time: _____Completed: _____

Persons in Charge

_____ _____

Printed Name – Supply Vessel PIC Printed Name – Receiving Vessel PIC

_____ _____

Signature Signature

APPENDIX D

DECLARATION OF INSPECTION – Additional Requirements – Contingency Response Team

This document should be completed prior to the transfer of fuel to ensure BOEMRE stipulation 6 of the Oil and Gas Lease Sale 195 and USCG Regulations in 46 CFR 35 and 33 CFR 155 and 156.

DATE	RECEIVING VESSEL	SUPPLYING VESSEL/TERMINAL	LOCATION

FUEL TO BE TRANSFERRED: Quantity: _____ Type of Oil: _____

I, _____, the person in charge of the receiving vessel for the transfer of fuel oil in bulk certify I have personally inspected this vessel with respect to the requirements in 46 CFR 35 and 33 CFR 155 and 156 and that opposite each of the applicable items below I have indicated whether the vessel complies with all pertinent regulations by initialing the check off list below.

I, _____, the person in charge of the supplying vessel/terminal for the transfer of fuel oil in bulk certify I have personally inspected this vessel/terminal with respect to the requirements below set forth in 46 CFR 35 and 33 CFR 155 and 156 and that opposite each of the applicable items below I have indicated whether the vessel/terminal complies with all pertinent regulations by initialing the check off list below.

Regulation Citation	Description	Supply Vessel / Terminal	Receiving Vessel
*** BOEMRE	Communications (2 way) systems tested and ready		
*** BOEMRE	Receiving and/or delivering vessel boomed		
*** BOEMRE	Boom tending capabilities present and ready to respond		
*** BOEMRE	SIMOPS Coordinator Contacted and CRT on standby		
*** BOEMRE	Ice conditions do not present an impediment to cleanup operations		
*** BOEMRE	Wind and sea conditions do not present an impediment to cleanup operations		

Date and Time of Fueling Operation: Date: _____Start Time: _____Completed: _____

Persons in Charge

_____ Printed Name – Supply Vessel/Terminal PIC

_____ Signature

_____ Printed Name – Receiving Vessel PIC

_____ Signature

Contingency Response Coordinator

_____ Printed Name – Supply Vessel/Terminal PIC

_____ Signature