

## DEVELOPMENT DRILLING & WO (I)

### Rig Move Assessment

<b>Facility Name: / Rig No.:</b>	<b>Location No:/ Well No.:</b>	<b>Name of HSE Supervisor Visited:</b>
<b>Date :</b>		
<b>Time:</b>		
<b>Representative:</b>		<b>Contractor's Representative:</b>

#.	REQUIREMENT	IMPLEMENTATION STATUS	COMMENTS (As per Documents, Site Observation etc.)
	<b>BELOW CHECKLIST ITEMS DEVELOPED BASED ON “KOC.GE.037 - HSE PROCEDURE FOR RIG MOVE OPERATIONS</b>		
1.	<b>Clause 4.1 &amp; Clause 5.2</b> Ensure that Rig specific Rig Move procedure/Manual is prepared by the rig Contractors as per this procedure & reviewed (by his designee KOC Rig Supervisor, Drilling Engineers, Team HSE Engineers / Supervisors).  It is mandatory to develop the Rig specific rig move procedure/manual considering the operational procedures and OEM recommendations (Refer clause 5.2 for further requirements)		
2.	<b>Clause 4.1</b> Proper implementation of this procedure (“KOC.GE.037) while carrying out the rig move operations inside & outside KOC security fence.		
3.	<b>Clause 5.1.1</b> Roles & responsibilities of rig move crew documented based on this procedure & the rig design.		
4.	<b>Clause 5.1.1</b> Subcontractor (Truck Company) involved in the rig move, their roles & responsibilities including HSE, towards rig move activities (Rig down, Rig Transportation, Rig up & camp move) with the rig Contractor shall be documented in the rig specific rig move Procedure/manual.		
5.	<b>Clause 5.1.2</b> The gap analysis of rig move Subcontractor HSE MS procedure to be conducted by the rig contractor, bridging document shall be developed, the gaps bridged, & approved by Rig Contractor.		

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6.	<b>Clause 5.1.2</b> Any specific HSE Procedure from Contractor related to Rig Up, Rig Move & Rig Down & Rig specific rig move procedure.		
7.	<b>Clause 5.1.3</b> Route Survey conducted as per 5.1.3 <ul style="list-style-type: none"> <li>Drilling Contractor Tool Pusher &amp; Truck pusher shall inspect &amp; conduct rig move route survey of the proposed rig route/road/condition of new location prior to rig move planning.</li> <li>The route survey checklist sheet (Annexure 1 Sample) shall be prepared by rig Contractor considering all the above minimum requirements &amp; signed by the persons who participated in it.</li> <li>After the route survey has been carried out &amp; all preventive / corrective actions for rig move operational constraints &amp; HSE risks are rectified, Rig Superintendent / Tool pusher will prepare a rig move plan document with a filled in Pre rig move plan checklist as per Annexure 2,</li> <li>A pre-move meeting will be called by KOC Rig Supervisor &amp; shall be held on the rig between the Rig Superintendent Tool pusher, Truck pusher, Contractor/ sub-contractor safety officer, KOC HSE Supervisor (Concerned controlling Team field HSE Representative) &amp; the KOC rig Supervisor prior to rig move. &amp; documented.</li> </ul>		
8.	<b>Clause 5.1.4</b> <ul style="list-style-type: none"> <li>Rig move plan document shall be prepared based on the route survey, critical lifts &amp; priority loads by Rig Contractor &amp; submitted to KOC Rig supervisor for information, review/ comments &amp; records prior to each rig release.</li> <li>Each well to well rig move plan shall be reviewed by KOC rig Supervisor &amp; provide comments/ recommendations as needed</li> </ul>		
9.	<b>Clause 5.1.5</b> <ul style="list-style-type: none"> <li>The activities that required work permits for all rig move operations (Rig down, Rig move &amp; Rig up) shall be identified by the rig Contractor &amp; their PTW procedure/ process shall be followed.</li> <li>Prior to the specific activities, during pre job safety meetings JSA shall be discussed with personnel involved in specific jobs for better understanding.</li> <li>Ensure that rig specific risk register shall cover the activities/hazards involved in rig move operations &amp; implement the control measures.</li> </ul>		
10.	<b>Clause 5.1.6</b> <ul style="list-style-type: none"> <li>Rig Contractor shall ensure that the critical load data sheet/rig equipment load register shall be developed &amp; maintained as a part of rig specific rig move procedure/manual for all heavy equipment</li> <li>JSA/ risk assessment carried out for all critical lifts.</li> <li>All lifting &amp; mobile equipment's operations shall be carried out under supervision &amp; operated by authorized personnel only. All Mobile lifting Equipment deployed for the rig move operations shall possess valid certifications &amp; require KOC "Clearance Certificate". Mobile lifting equipment</li> </ul>		

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	<p>operators, signalman/ banks men shall be competent enough to receive &amp; transmit required signals/ communication.</p> <ul style="list-style-type: none"> <li>• Appropriate third party inspection certificate shall be available with the concerned supervisor.</li> <li>• Crane &amp; fork lift operators shall be trained as per their Company procedures &amp; certificate to be made available at the rig site.</li> <li>• Safe distances must be ensured while unloading the equipment near the well head.</li> <li>• Ensure all personal involved in loading/unloading operations of material shall remain at safe distance to avoid untoward incident due to fall of material from the trucks/trailers during loading &amp; unloading operations.</li> </ul>		
11.	<p><b><u>Clause 5.1.7</u></b></p> <ul style="list-style-type: none"> <li>• Trucks must be in good condition to safely transport the loads. Ensure the loads are evenly distributed on the truck to avoid any load movement on the trucks during transportation.</li> <li>• Beacon lights, Reflective sticker &amp; other hazard indication signs shall be available on the truck to communicate the hazards.</li> </ul>		
12.	<p><b><u>Clause 5.1.8</u></b></p> <ul style="list-style-type: none"> <li>• Rig move Supervisor/Truck pusher shall ensure that the load is secured adequately before commencing the move.</li> </ul>		
13.	<p><b><u>Clause 5.1.9</u></b></p> <ul style="list-style-type: none"> <li>• Operations such as lowering &amp; raising of mast, substructure &amp; draw works, shall be carried out under the supervision of Rig Superintendent or his designee &amp; KOC Rig Supervisor during day light hours only.</li> <li>• Ensure that the OEM procedure/ recommendation, API RP 54 &amp; API RP 4G applicable requirements are documented for rigging up/down the mast, substructure &amp; draw works.</li> </ul>		
14.	<p><b><u>Clause 5.1.10</u></b></p> <ul style="list-style-type: none"> <li>• Convoy move is preferred while moving the wide, tall, heavy or otherwise oversized loads. Escort vehicle shall be provided by Rig Contractor/Rig Move Subcontractor with designated driver &amp; Supervisor in the front &amp; rear side of the convoy. The list of loads/ rig equipment that are part of rig move convoy shall be listed in the Rig move plan.</li> <li>• Rig move shall be conducted during day light only. In case of extreme emergency, rig move during night time shall be carried out after approval from concerned</li> <li>• Rig move shall be avoided when dusty, rainy, heavy wind &amp; foggy weather exists where the visibility is less than 100m.</li> <li>• Convoy speed shall be limited to maximum 20km/hour or OEM recommended speed limits whichever is minimum.</li> <li>• A designated &amp; visibly identified pilot vehicle will be provided by rig Contractor/ sub-contractor to guide, monitor &amp; direct the rig move convoy considering the required precautions during rig move activities.</li> </ul>		

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	<ul style="list-style-type: none"> <li>A designated &amp; visibly identified rear escort vehicle will be provided to guide, monitor &amp; direct the rig move convoy safely particularly the traffic approaching from behind.</li> <li>Rig Contractor/Rig move Subcontractor needs to ensure that escort vehicles (Pickup, SUV etc.,) associated with rig move operation shall be of four wheel drive.</li> <li>Drivers of the rig move convoy shall be designated &amp; provided with necessary training including defensive driving.</li> <li>Only experience drivers in rig move shall allowed operating the vehicles in the convoy.</li> <li>Rig Contractor STP to carry the KOC SMART alert system in their vehicles on rig move.</li> <li>Convoy speed shall be limited to maximum 20km/hour or OEM recommended speed limits whichever is minimum.</li> <li>To ensure safe transportation of rig, KOC Personnel will conduct spot checks as needed during the transportation of the Rig from one location to other location based on the HSE risks identified as part of Route survey.</li> </ul>		
15.	<b>Clause 5.1.11</b> Rig move shall be carried out in the approved rig roads in KOC field.		
16.	<b>Clause 5.1.12</b> <ul style="list-style-type: none"> <li>Proper communication shall be ensured by Rig Contractor/Rig move Sub-Contractor during all the activities of the rig move. Methods of communication between the Tool pusher, rig move crew, truck pusher &amp; KOC Rig Supervisor shall be defined in the rig move plan.</li> <li>For rig move on highways &amp; public roads, Contractor shall communicate with concern from ministries &amp; shall be take necessary permissions as per their requirements.</li> </ul>		
17.	<b>Clause 5.1.13</b> <ul style="list-style-type: none"> <li>All mobile equipment used for rig move shall be maintained appropriately &amp; fit for use. As a minimum, maintenance of lifting &amp; road transport equipment (Prime movers, Trailers Cranes, Forklifts, Pick up etc.,) shall be conducted in accordance with the OEM specifications.</li> <li>All mobile equipment operations shall be carried out under supervision &amp; operated by authorized personnel only. All Mobile Equipment deployed for the rig move operations shall possess valid certifications &amp; require KOC "Clearance Certificate".</li> </ul>		
18.	<b>Clause 5.1.14</b> <ul style="list-style-type: none"> <li>Personal working at height shall perform the job with all necessary fall prevention &amp; protection measures. All the personnel involved in the rig move process shall be in compliance to the site PPE requirements.</li> </ul>		
19.	<b>Clause 5.1.15</b> <ul style="list-style-type: none"> <li>Awareness on the rig specific rig move procedure shall be provided to all the concerned involved in rig move activities.</li> <li>The Rig Contractor as per rig specific rig move procedure/manual shall provide the training on the individual roles &amp; responsibilities of crew involved in rig move operations.</li> </ul>		

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	<ul style="list-style-type: none"> <li>The newly assigned crew &amp; Green Hands at all levels on the rigs shall be supervised &amp; mentored by trained &amp; experienced crew of the concerned contractor Rigs for full familiarization on rig activities for ensuring their competency &amp; safe behavior, before they are assigned the job independently.</li> </ul>		
20.	<p><b><u>Clause 5.1.16</u></b></p> <ul style="list-style-type: none"> <li>All incidents occurring during rig move operations inside &amp; outside KOC fence are reportable to KOC.</li> <li>The rig Contractor &amp; KOC shall report &amp; investigate all the incidents including near misses &amp; hazardous conditions as per the KOC procedures. Necessary corrective &amp; preventive actions shall be taken by the contractor based on the recommendations.</li> <li>In case of any serious &amp; major incidents during rig up, rig down &amp; rig move, all key personnel &amp; crew involved during the activities &amp; all witnesses (KOC, rig contractor &amp; sub-contractor employees) to be made available in Kuwait until KOC investigation is completed.</li> <li>Safety Alerts/ Lessons learnt/recommendations from the rig move incidents investigations at the rig &amp; others as received from KOC to be discussed &amp; implemented in all rigs where similar operations are carried out.</li> <li>Contractor shall analyze the safe &amp; unsafe behavior of the crew based on the evaluation of STOP card program</li> </ul>		
21.	<p><b><u>Clause 5.1.17</u></b></p> <ul style="list-style-type: none"> <li>Line voltage absolute Limit of Approach/ vertical minimum clearance for overhead electrical power lines to be noted &amp; comply with clause no. 5.1.18 of HSEMS Procedure KOC.GE.11 &amp; clause no. 5.1 of Procedure KOC.SA.27 (Electrical Work Safety procedure).</li> <li>Truck pusher shall be responsible as Journey Manager to issue &amp; implement the Journey Management Plan (JMP) &amp; contact with drivers through radio/ mobiles during transport.</li> <li>During rig move Operations all non-essential crew should be moved out. Only the required crew shall be available on the site &amp; the Tool pusher is responsible for distribution of crew at old &amp; new locations</li> <li>Trained first aider with first aid kit available along with the convoy during the Rig move.</li> <li>For activities deviating from rig move procedures/ rig move plan/ SOP's etc., rig contractor shall prepare Management of change (MOC) in accordance with Contractor MOC procedure, &amp; risk assessment shall be carried out for those activities.</li> <li>Contractor shall use the specified tools, tackles, slings, equipment's, trucks, personnel, etc. as mentioned in the SOP for each rig move activity.</li> <li>Tools &amp; equipment's such as rig pulling beams &amp; pulling vehicle shall be brought near to the sub structure after rig tire assemblies are connected to the substructure &amp; when the rig is ready for final move.</li> </ul>		

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	<ul style="list-style-type: none"> <li>Rig Contractor shall conduct periodic internal HSE inspections &amp; audits for the rig move operations as per their rig specific rig move procedure, rig move plans &amp; sub-contractor bridging document etc.</li> </ul>		
22.	<b>Clause 5.1.18</b> <ul style="list-style-type: none"> <li>Contractor to develop &amp; implement Journey Management Plan / Procedures for rig move operations. It should cover the following minimum requirements related to journey management in addition to KOC Driving Procedures &amp; Contractor Driving procedures (Refer Rig Move procedure)</li> </ul>		
23.	<b>Clause 8.0</b> HSE Records (Retention Period) <ul style="list-style-type: none"> <li>Route survey checklists, pre move checklist/pre move meeting checklist, Rig move plan, rig move plan checklist &amp; lifting plan (2 years)</li> <li>Applicable Work Permits (Refer to Permit to Work Procedure, KOC.SA.004 for complete details)</li> <li>Training Records (Refer to HSE Training, Awareness &amp; Continued HSE Learning Process Procedure, KOC.GE.028, for complete details)</li> <li>3rd Party Test Certificate for Lifting Machines &amp; Lifting Tools &amp; Tackles (5 Years)</li> </ul>		
24	<b><u>Any other areas / other findings</u></b>		
	<b>Signature of HSE Supervisor :</b>		