NSQF QUALIFICATION FILE GUIDANCE

Version 6: Draft of 08 March 2016

NSDA Reference
To be added by NSDA

CONTACT DETAILS OF THE BODY SUBMITTING THE QUALIFICATION FILE

Hydrocarbon Sector Skill Council
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List of documents submitted in support of the Qualifications File

1. Hydrocarbon Sector Profile
2. Qualification Pack- Assistant Technician- Production (Oil & Gas)
3. Occupational Map – Hydrocarbon Sector
4. MoM held in MoPNG on 19.01.2017, wherein the QP development of High priority trades were directed to respective Oil PSU
5. List of the companies participated in the development of QP
6. Composition of Task Force committee members
7. Industry Validation/Communication

SUMMARY

<table>
<tr><td>Qualification Title</td><td>Assistant Technician- Production (Oil & Gas)</td></tr>
<tr><td>Qualification Code</td><td>HYC/Q 0102</td></tr>
<tr><td>Nature and purpose of the qualification</td><td>Learners after attaining the certificate of Technician- Production (Oil & Gas) will be competent to perform the job at Oil & Gas Production installation (Onshore & Offshore), while following standard safety procedures</td></tr>
<tr><td>Body/bodies which will award the qualification</td><td>Hydrocarbon Sector Skill Council</td></tr>
<tr><td>Body which will accredit providers to offer courses leading to the qualification</td><td>Hydrocarbon Sector Skill Council</td></tr>
<tr><td>Body/bodies which will carry out assessment of learners</td><td>Hydrocarbon Sector Skill Council accredited body will carry out the assessment</td></tr>
<tr><td>Occupation(s) to which the qualification gives access</td><td>This Qualification give the access to learners in the occupation of Oil & Natural Gas exploration and production</td></tr>
<tr><td>Licensing requirements</td><td>N/A</td></tr>
<tr><td>Level of the qualification in the NSQF</td><td>Level 4</td></tr>
<tr><td>Anticipated volume of training/learning required to complete the qualification</td><td>1000 Hours including on the job training</td></tr>
<tr><td>Entry requirements and/or recommendations</td><td><u>Age:</u> 18 years, <u>Minimum Education Qualification</u>: Class XII or Class X+2 year of ITI course. {NCO/2015 8131.3100}</td></tr>
<tr><td>Progression from the qualification</td><td>An individual may progress as Senior Technician - Production (Oil & Gas)</td></tr>
<tr><td>Planned arrangements for the Recognition of Prior learning (RPL)</td><td>Yes, the details of RPL process is mentioned in assessment section of this Q-file</td></tr>
<tr><td>International comparability where known</td><td>Study for the international comparability is yet to be done, however during desk research, qualification is mapped with the Qualification of different countries, which is as follows:
<table>
<tr><th>S No</th><th>Country with Comparability</th><th>Title</th><th>Code</th></tr>
<tr><td>1.</td><td>UK</td><td>Operate an Oil and Gas Process (Crude Oil Stabilisation)</td><td>OPIPOH 15</td></tr>
<tr><td>3.</td><td>USA</td><td>CRUDE-OIL TREATER (petrol. & gas) alternate titles: Dehydrator Operator; production</td><td>541.382 -014</td></tr>
</table></td></tr>
<tr><td>Date of planned review of the qualification.</td><td>2 years after approval of the Qualification</td></tr>
</table>

Formal structure of the qualification			
Title of component and identification code.	**Mandatory/ Optional**	**Estimated size (learning hours)**	**Level**
HYC/N 0104 Production (On Shore and Off Shore)	M	1000 Hours	4
HYC/N 0102 Occupational health and safety (OHAS)	M		4
HYC/N 0103 Working effectively with colleagues and supervisor	M		4

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum Document or a Qualification Pack.

Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information. Qualification Pack – Assistant Technician-Production (Oil & Gas)

SECTION 1
ASSESSMENT

Body/Bodies which will carry out assessment:

Bodies/Bodies empanelled by Hydrocarbon Sector Skill Council for conducting the assessment will carry out the assessment of learners

How will RPL assessment be managed and who will carry it out?

Under the Recognition of Prior Learning (RPL), the candidates enrolled and the assessment will be carried out as per the assessment criteria and assessment outcome of the full Qualification and the process of assessment will be carry out by the body/bodies empanelled by Hydrocarbon Sector Skill Council

In RPL, the candidate already has the skills and knowledge while working on the job from long, the learners only requires to undergo the assessment process and certification to awarded to the candidates who successfully clears the assessment. The tentative process of RPL would include the flowing stages:

1 Cluster Mapping and Mobilisation of the candidates
2 Counselling & Pre-Screening
4 Enrolment/Batch formation
5 Orientation, Impartation of minimum hour training program and Feedback
7 Assessment by HSSC empanelled body
8 Evaluation of Assessment Result
9 Issuance of the Certificate to successful candidates

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, reliable and fair and show that these are in line with the requirements of the NSQF.

The assessment of candidates/trainees will be on the basis on assessment outcome/assessment criteria of the Qualification. In the assessment criteria for each NOS marks have been defined for theoretical and practical skills, on which the candidate will be assessed. The emphasis is on 'learning-by-doing' and practical demonstration of skills and knowledge based on the performance criteria.

Theory/Knowledge test – This section will test the trainee on his/her knowledge on the subject/trade. The test will be carried out online/offline with a set of random Question paper. that include multiple choice questions, True/False Statement, audio-video question etc.

The Question Bank will be developed by Subject Matter Experts (SME) of the Oil & Gas sector and these Questions again be vetted by the Industry Experts, the assessments are designed so as to assess maximum parts during the practical hands on work.

Practical/Demonstration Test – This stage involves the face to face interaction between Assessor and each trainee. The practical knowledge will be tested through Trade Test which demonstrates the skill required for the job, by which assessor would be able to evaluate the trainee on his/her practical knowledge on respective Qualification.

To ensure the maximum possible consistency in the assessment by different assessors at different locations, the assessors are to be elaborated about the stages involved in the assessment and the

assessor role in the assessment process, the following also elaborated to the assessor before assessment:

- Qualification Pack Structure
- Guidance for the assessor to conduct theory and practical assessments
- Guidance for trainees to be given by assessor before the start of the assessments.
- Guidance on assessments process, practical brief with steps of operations practical observation checklist
- Practical/Demonstration Test guidance for uniformity and consistency.
- Guidance on assessment evidence collection (signed attendance copy, verification of the authenticity of the candidate by checking the photo ID card, Photographs-while assessment undergoing etc.)

The empanelled assessment agencies will be instructed to hire assessors with integrity, reliability and fairness. Each assessor shall sign a document with its assessment agency by which they commit themselves to comply with the rules of confidentiality and conflict of interest, independence from commercial and other interests that would compromise impartiality of the assessments. The assessment agencies are instructed to Ideally have assessor with sufficient amount of relevant industry experience related to Qualification. The assessors will also have scrutinized and made to undergo induction of Assessment Framework, competency based assessments etc.

Assessment strategy:

- For each Qualification Pack assessment criteria has developed, which describe the weightage for each NOS/Performance criteria (PC) and assigned marks based for each NOS separately for theoretical and practical skill
- The question bank will be developed by the subject matter expert to assess the theoretical and practical knowledge.
- The accredited assessment agency will carry out the assessment process on the date proposed after completion of the training. The assessment will be carried out on the basis of the two parameters i.e. Theoretical test and Practical test.
- The result of the assessment will be shared by assessment body to the HSSC for review and compliance then after the result will be process for the generation of the certificates of passed candidates.
- Assessments can be conducted in the regional languages in case of any specific requirement form the concerned Training Provider.
- For ensuring the impartial assessment it will be ensured that the Assessment Bodies (AB) will not involve in training delivery.

Please attach any documents giving further information about assessment and/or RPL.
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

ASSESSMENT EVIDENCE

Complete a grid for each component as listed in "Formal structure of the the qualification" in the Summary.

NOTE: this grid can be replaced by any part of the qualification documentation which shows the same information – ie Learning Outcomes to be assessed, assessment criteria and the means of assessment.

Title of Component:

Job Role: Assistant Technician-Production (Oil & Gas) **Qualification Pack:** HYC/Q 0102 **Sector Skill Council**: Hydrocarbon Sector Skill Council					
Guidelines for Assessment 1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC. 2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC. 3. Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS. 4. Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below). 4. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion. 5. To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment. 6. In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.					
Outcomes to be assessed		**Assessment criteria for the outcome**			
Production (On Shore and Off Shore)	PC1. Understand Production Process in Oil & Gas field operation: Oil and Gas Processing Operations (Well surveillance, monitoring & maintenance,wireline operation), Oil & Gas Production Processes (onsite training), (Compressor), (Static as well as mobile Boilers), Multi-Phase Separation in separators & Emulsion Treaters)	100	2	1	1
	PC2. Understand Oil and Gas Processing Operations (Pigging, Hottapping, new flow line laying, replacement of existing flow lines,clearing of flow lines plugging), (Gas Dehydration), (Produced Water), (Water Injection)		2	1	1
	PC3. Operation and maintenance of various Well stimulation & Servicing Units, wireline units and new well completion		2	0	2
	PC4. Operation and maintenance of work-over well completion		1	1	0
	PC5. Carry out operation of crude oil upliftment through bousers, monitoring and maintenance of field Indirect Heaters ,emulsion Treaters and Crude Oil Storage Tanks, oil and Gas Processing Operations (Gas Treatment)		2	0	2

	PC6. Describe safe working practices for working in a maintenance workshop		1	0	1
	PC7. Describe the operation of safety documentation and procedures		1	0	1
	PC8. Identify relevant emergency requirements for a maintenance workshop		1	0	1
	PC9. Identify potential hazards in a workshop environment		1	0	1
	PC10. Describe the associated risks and implications for people, equipment and the environment		1	0	1
	PC11. Describe measures that could be taken to minimise the risks		1	0	1
	PC12. Communicate and work effectively as part of a team for maintenance tasks		1	0	1
	PC13. Take part in a tool box talk		1	0	1
	PC14. Use correct manual handling techniques for maintenance tasks		1	0	1
	PC15. Select and us the correct personal protection equipment for maintenance tasks		1	0	1
	PC16. Maintain the workspace in a clean and tidy manner and dispose of waste		1	0	1
	PC17. Identify tools, equipment and material that would be required for a range of basic routine for Off Shore Oil and Gas Production tasks		1	0	1
	PC18. Prepare the tools, equipment and materials for given Production tasks		1	0	1
	PC19. Prepare the work area for given Production tasks		1	0	1
	PC20. Identify tools, equipment and material that would be required for a range of basic routine for on Shore Oil and Gas Production asks		1	0	1
	PC21. Prepare the tools, equipment and materials for given Production tasks		1	0	1
	PC22. Prepare the work area for given Production tasks		1	0	1
	PC23. Carry out Basic routines for Oil and Gas Production Process		1	0	1
	PC24. Carry out appropriate cleaning routines using the correct cleaning agents		1	0	1
	PC25. Carry out routine lubrication, using the correct lubricant for the application		1	0	1
	PC26. Check oil levels and add oil as required		1	0	1
	PC27. Tighten fastenings using correct tools and equipment		1	0	1
	PC28. Check tensions and adjust as required		1	0	1
	PC29. Carry out basic visual inspection for common faults		1	0	1
	PC30. record observed for any faults		1	0	1
	PC31. Clear work areas following Pre and Post Production tasks		1	0	1
	PC32. Carry out Basic Production Reporting Data Entry		2	1	1
	PC33. Interpretation of Production Data		2	1	1
	PC34. Prepare for basic routine maintenance tasks		2	1	1

	PC35. Describe basic routine maintenance techniques		2	1	1
	PC36. Carry out basic routine maintenance tasks		2	1	1
	PC37. Carry out basic inspections		2	1	1
	PC38. Identify the use of basic maintenance hand tools		2	1	1
	PC39. Demonstrate the use of basic hand tools for maintenance tasks and the production of an artifact		2	1	1
	PC40. Demonstrate the care of basic maintenance hand tools		2	1	1
	PC41. Describe the key features of prime movers		1	0	1
	PC42. Outline typical maintenance requirements of prime movers		2	1	1
	PC43. Describe the key features of transmission systems and components		2	1	1
	PC44. Outline typical maintenance requirements of transmission systems and components		2	1	1
	PC45. Describe the key features of distribution systems		2	1	1
	PC46. knowledge the key features of separation system		2	1	1
	PC47. understanding of the key features of tank systems		2	1	1
	PC48. know-how the key features of oil and gas transport systems		2	1	1
	PC49. identify the key features of oil and gas well		2	1	1
	PC50. understand the key features of SRP systems		2	1	1
	PC51. Describe the key features of gas lift systems		2	1	1
	PC52. knowledge the key features of rotating equipment and tools		2	1	1
	PC53. Outline typical maintenance requirements of rotating equipment and tools		2	1	1
	PC54. Outline typical maintenance requirements of measurement systems and equipment		2	1	1
	PC55. Outline typical maintenance requirements of control systems and equipment		2	1	1
	PC56. Outline typical maintenance requirements of protection and detection systems		2	1	1
	PC57. Understand Production operation and processes in Oil & Gas		2	1	1
	PC58. Indentify oil & gas equipments		2	1	1
	PC59. Understand the functionality of each equipment		2	1	1
	PC60. Understand standard operating procedures		2	1	1
	PC61. Understand preventive maintenance requirements		2	1	1
	PC62. Understand the record keeping and reporting instructions		2	1	1
	PC63. Understand the HSE requirement		2	1	1
	PC64. Understand the emergency response roles and responsibility		2	1	1
				35	65

HYC/N 0101 Occupational health and safety (OHAS)	PC 1 Use protective clothing/equipment for specific tasks like cutting, welding, repairing in pipeline jobs, well operations, maintenance inside the installation and work conditions during day to day work and during emergency.	100	6	3	3
	PC2. State the name and location of people responsible for health and Safety for the workplace and escalation matrix.		5	0	5
	PC 3 Identify job-site hazardous work and state possible causes of risk or possible accidents in the workplace.		6	3	3
	PC 4 Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role.		6	3	3
	PC 5. State location of general health and safety equipment in the workplace.		5	0	5
	PC 6. Inspect for faults		5	3	2
	PC 7 Work safely in and around trenches		5	3	2
	PC8. Identify common risks and safety SOP in Oil & Gas production area		5	1	4
	PC 9. Use the various appropriate fire extinguishers on different types of fires correctly.		5	2	3
	PC 10. Identify and follow pro active and reactive fire fighting SOP in Oil & Gas production facilities		5	3	2
	PC 11. Perform Fire Evacuation Steps		6	3	3
	PC12. Prepare incident Reports		5	3	2
	PC 13. Availability of First Aid box & accessories		5	2	3
	PC 14. Demonstrate how to free a person from electrocution		5	3	2
	PC 15. Administer appropriate first aid to victims where required eg. in case of bleeding, burns, choking, electric shock, poisoning etc.		5	2	3
	PC 16. Administer appropriate first aid in chemical hazard		5	2	3
	PC 17. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments		5	2	3
	PC18. Follow SOP in Oil & Gas production Facilities		5	2	3
	PC 19 Use/Propoer utilization of breathing apparatus		3	1	2
	PC 20 Ensure emergency preparation and resonse		3	1	2
	Total			42	58
HYC/N 0103 Working effectively with colleagues and supervisor	PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required	92	8	2	6
	PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt		8	2	6
	PC3. Give information to others clearly, at a pace and in a manner that helps them to understand		8	2	6
	PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks		8	2	6
	PC6. Display appropriate communication etiquette while working		8	2	6

	PC7. Display active listening skills while interacting with others at work		8	2	6
	PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness,		8	2	6
	PC9. Demonstrate responsible and disciplined behaviors at the workplace		8	2	6
	PC10. Demonstrate Time Management Skills		10	2	8
	PC11. Understands Expectation Management		8	2	6
	PC12. Demonstrate Commitment to work, adhering to SOPs, Honesty etc.		10	2	8
	Total			22	70

Means of assessment 1

The assessment comprises of:

- Theory/Knowledge test
- Practical/Demonstration Test

Means of assessment 2
Add boxes as required.

Pass/Fail
The passing percentage is as per the NSDC, SSC assessment guidelines.

SECTION 2
EVIDENCE OF LEVEL

Assistant Technician-Production (Oil & Gas)- HYC/ Q 0102					
Process required	**Professional Knowledge**	**Professional Skills**	**Core Skills**	**Responsibility**	**Level**
The Technician-Production (Oil & Gas) is primarily work as a part of field team at production installation, maintenance services, artificial lift team etc. His role will be to follow and execute instructions; operate using specified tools, equipment's and systems while following standard safety procedures The individuals at the job also need to have understanding of the process involved in Oil & Gas Production The activities for this Qualification are the familiar and routine activities in nature and he handles all this independently.	The individual is expected to have factual knowledge of Oil & Gas production processes and understand the risk of not following defined procedures. The individual is required to have knowledge of all tools, equipment and material that would be required for a range of basic routine for Off Shore Oil and Gas Production tasks The individual should know the maintenance requirements of measurement/control/ protection and detection systems and equipment	The individual should understand the organisational SOP on Production Process, the risk and impact of not following defined procedures/work instructions The individual should have the knowledge of escalation matrix for reporting identified incidents, troubles and/ or emergencies e.g. system failures, fire and power failures and should maintain records and implications of non-maintenance of the same The individual must have capacity to apply professional skills needed to operate equipment with the understanding of principles needed to explore and adapt systems.	The individual is expected to have basic communication skills to fill appropriate forms, process charts and activity logs, etc. and also understand application of basic arithmetic principles. The individual should able to read and understand manuals, work orders, health and safety instructions, memos, reports etc. The individual is expected to conduct themselves in ways, which show a basic understanding of the social and professional environment of working environment.	The Technician-Production (Oil & Gas) is to perform the job at Oil & Gas Production installation (Onshore & Offshore) production facility while following standard safety procedures, the individual is completely responsible for own learning and continuously engaged in the self-learning process The individual is majorly responsible for his own job and self-learning process which justifies the pegging of the QP at level 4.	4
Level 4	Level 4	Level 4	Level 4	Level 4	

SECTION 3
EVIDENCE OF NEED

What evidence is there that the qualification is needed?

The Production Technician work at onshore based oil and gas processing facility or an offshore production. Oil Companies have their independent training programme for the work force, However, there are no standard training / Qualification Pack all across the Oil Industry, which the work force should possess at the time of recruiting / enrolling the work force for performing the job, which deals with flammable/hazardous products.
Hence there was need felt by the Ministry of Petroleum & Natural Gas (MOP&NG) in consultation with the members of Industry Task force of HSSC, to develop Qualification Pack for this trade.

What is the estimated uptake of this qualification and what is the basis of this estimate?

Since Skill Gap study of the Hydrocarbon Sector yet to take place to figure out the estimated uptake of this qualification, However the estimated uptake of Production Technician would be of around 3000 Nos. in next five years. The basis of this estimate is emerged out from the Task Force committee (Task force represents the members form Oil & Gas PSU's).

What steps were taken to ensure that the qualification(s) does (do) not duplicate already existing or planned qualifications in the NSQF?

QPs for Various related trades of other Sector Skill Council studied to ensure that there is no duplicity. The Qualification of this trade is required because of the nature of Oil & Gas Industry as the individual will be handing inflammable and hazardous product. QP is very specific to Petroleum Industry and the individual under this Qualification will be handling hazardous and inflammable products therefore requires specialised safety tasks

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

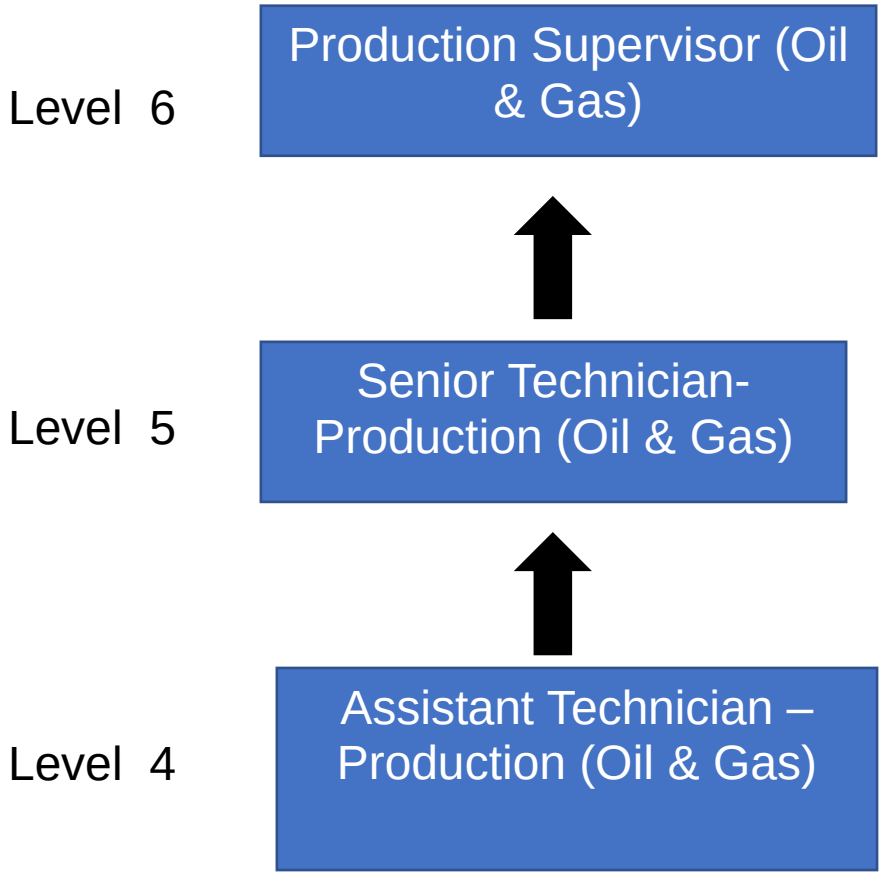
The Qualification Pack was circulated among the industry members for their inputs and feedback, however the Qualification shall be reviewed by the industry members after two years of the approval.

Please attach any documents giving further information about any of the topics above.
Give the titles and other relevant details of the document(s) here. Include page references showing where to find the relevant information.

SECTION 4
EVIDENCE OF PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

An individual may progress to the Supervisory Position



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