

Field Engineering and Technology

Review of *Petrochemical Industry* unit standards

| Subfield | Domain | ID |
|------------------------|---|--|
| Petrochemical Industry | Petrochemical Cathodic Protection | 9575, 9576 |
| | Petrochemical - Operation of Vehicles, Craft, and Equipment | 9559-9564, 9580, 9581, 9602, 24750 |
| | Petrochemical Operations Communication and Responses | 9521, 9524, 9618, 9621, 9626, 9629, 9631, 24039 |
| | Petrochemical Process and Product Management | 9486, 9506, 9535, 9587, 9589, 9591, 9592, 9597, 9601, 9607, 9609, 9613, 9616, 9617, 18285, 18286, 18422, 18423, 18725, 18733, 19417, 19418 |
| | Petrochemical Product Transmission and Transfer | 9553, 9574, 9582-9586 |
| | Petrochemical Well and Wellhead Operations | 9529, 9530, 9532-9534, 9536, 9537, 9539, 9540 |

The Primary ITO has completed the review of the unit standards listed above.

Date new versions published

February 2020

Planned review date

December 2025

Summary

The review commenced in July 2019 as the unit standards had reached their scheduled review date and to take into account changes to qualification graduate outcomes in the New Zealand Certificate in Energy and Chemical Field Operations (Level 4) with strands in Advanced Steam Generation Plant Operation, Chemical Plant Operation, Geothermal Plant Operation, Petrochemical Plant Operation, and Petrochemical Transfer and Storage [Ref: 2307]; and the New Zealand Certificate in Energy and Chemical Process Operations (Level 5) [Ref: 2308].

A working group was set up consisting of representatives from across the petrochemical industry. Working group members had the responsibility of contributing their expertise to unit standard updates as well as liaising with their networks over the duration of the review. The working group met in late July 2019, and changes were proposed to unit standards to meet current industry requirements. Subsequent consultation with the working group was carried out by email and phone during August and September 2019. Updated unit standards were finalised in late September and sent out for wider stakeholder consultation by online survey in October. Feedback was discussed with the working group and changes were incorporated where appropriate.

New replacement standards have been classified in domains that are under the coverage of The Skills Organisation and ServiceIQ – both Industry Training Organisations (ITOs) were consulted and both ITOs endorsed the use of these domains.

Main changes

- 33 unit standards were designated expiring without replacement as they are no longer required, have had low usage, or have had declining usage for the past five years.
- 21 unit standards in Subfield *Petrochemical Industry* were reclassified to allow their use over a wider range of industry sectors as the skills are transferable.
- Four unit standards in Domain *Petrochemical - Operation of Vehicles, Craft, and Equipment* were replaced by new unit standards in different domains (two new in Domain *Aircraft Operation* and two new in Domain *Crain Operation*) as their content was a better fit with these domains.

- Domains under Subfield *Petrochemical Industry* were designated lapsing or lapsed as they no longer contain or will no longer contain registered or expiring unit standards.
- Credits increased for unit standard 9563 to better reflect time taken to learn, practice and be assessed for the skills specified in the unit standard.
- Unit standards were updated to reflect current industry practices.
- Level decreased for unit standards 9582, 18423, and 18733 to better align with the level descriptors.

Category C and D unit standards will expire at the end of December 2022

The last date for assessment of superseded versions of Category B unit standards is December 2022

Impact on existing organisations with consent to assess

| Current consent for | | | Consent extended to | | |
|---------------------|---|-------|---------------------|----------------------------|-------|
| Nature of consent | Classification or ID | Level | Nature of consent | Classification or ID | Level |
| Subfield | Petrochemical Industry | 4 | Subfield | Energy and Chemical Plant | 4 |
| Subfield | Petrochemical Industry | 5-6 | Subfield | Energy and Chemical Plant | 5 |
| Subfield | Petrochemical Industry | 4-6 | Standards | 32093, 32094, 32095, 32096 | 4 |
| Domain | Petrochemical - Operation of Vehicles, Craft, and Equipment | 4 | Standards | 32093, 32094, 32095, 32096 | 4 |
| Domain | Petrochemical Operations Communication and Responses | 3 | Standards | 9631, 24039 | 2 |
| Domain | Petrochemical Operations Communication and Responses | 3 | Standard | 9618 | 3 |
| Domain | Petrochemical Process and Product Management | 2 | Standard | 19418 | 2 |
| Standard | 9563 | 4 | Standard | 32093 | 4 |
| Standard | 9564 | 4 | Standard | 32094 | 4 |

Detailed list of unit standards – classification, title, level, and credits

All changes are in **bold**.

| Key to review category | |
|------------------------|---|
| A | Dates changed, but no other changes are made - the new version of the standard carries the same ID and a new version number |
| B | Changes made, but the overall outcome remains the same - the new version of the standard carries the same ID and a new version number |
| C | Major changes that necessitate the registration of a replacement standard with a new ID |
| D | Standard will expire and not be replaced |

Engineering and Technology > Petrochemical Industry > Petrochemical Cathodic Protection
Manufacturing > Energy and Chemical Plant > Monitoring of Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|------|---|-------|--------|-----------------|
| 9575 | Explain the purpose and application of cathodic protection in a petrochemical workplace Describe the purpose and application of cathodic protection in an energy and chemical plant | 4 | 2 | B |
| 9576 | Carry out cathodic protection system monitoring in a petrochemical workplace Carry out cathodic protection system monitoring in an energy and chemical plant | 4 | 3 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical - Operation of Vehicles, Craft, and Equipment

| ID | Title | Level | Credit | Review Category |
|-------|---|-------|--------|-----------------|
| 9559 | Sling routine loads and communicate during crane operations in a petrochemical workplace | 4 | 3 | D |
| 9560 | Operate heavy lifting and rigging equipment in a petrochemical workplace | 3 | 3 | D |
| 9561 | Manage the lifting and placing of complex loads on a petrochemical off-shore installation | 4 | 3 | D |
| 9562 | Operate light lifting and rigging equipment in a petrochemical workplace | 2 | 2 | D |
| 9602 | Operate marine safety craft and equipment at a petrochemical off-shore installation | 4 | 5 | D |
| 24750 | Explain and demonstrate basic safety for the off-shore petrochemical industry | 3 | 2 | D |

Engineering and Technology > Petrochemical Industry
Service Sector > Cranes

| ID | Domain | Title | Level | Credit | Review Category |
|--------------|---|--|----------|----------|-----------------|
| 9563 | Petrochemical - Operation of Vehicles, Craft, and Equipment | Operate, lift, and place loads with a platform crane on a petrochemical off-shore installation | 4 | 5 | C |
| 32093 | Crane Operation | Operate, lift, and place loads with a platform crane on an offshore installation | 4 | 5 | |
| 9564 | Petrochemical - Operation of Vehicles, Craft, and Equipment | Lift and place loads between a petrochemical off-shore installation and a supply boat using a platform crane | 4 | 5 | C |
| 32094 | Crane Operation | Lift and place loads between an offshore installation and a supply boat using a platform crane | 4 | 5 | |

Engineering and Technology > Petrochemical Industry

Service Sector > Aviation

| ID | Domain | Title | Level | Credit | Review Category |
|--------------|---|---|----------|----------|-----------------|
| 9580 | Petrochemical - Operation of Vehicles, Craft, and Equipment | Demonstrate basic helicopter safety in an off-shore petrochemical workplace | 4 | 4 | C |
| 32095 | Aircraft Operation | Describe and demonstrate basic helicopter safety and underwater techniques in an offshore installation environment | 4 | 4 | |
| 9581 | Petrochemical - Operation of Vehicles, Craft, and Equipment | Administer helicopter landing operations on a petrochemical off-shore installation | 4 | 4 | C |
| 32096 | Aircraft Operation | Administer helicopter landing operations in an energy and chemical offshore installation | 4 | 4 | |

Engineering and Technology > Petrochemical Industry > Petrochemical Operations

Communication and Responses

| ID | Title | Level | Credit | Review Category |
|------|--|-------|--------|-----------------|
| 9521 | Coordinate the work of a maintenance team in a petrochemical workplace | 5 | 12 | D |
| 9524 | Establish the causes and location of reported faults in a petrochemical process at a petrochemical plant | 4 | 5 | D |
| 9626 | Coordinate and manage site safety control systems in a petrochemical workplace | 4 | 5 | D |
| 9629 | Operate emergency response equipment in a petrochemical workplace | 3 | 4 | D |

Engineering and Technology > Petrochemical Industry > Petrochemical Operations

Communication and Responses

Manufacturing > Energy and Chemical Plant > Operation of Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|------|--|-------|--------|-----------------|
| 9618 | Use and interpret petrochemical industry documentation Describe and use energy and chemical industry documentation | 3 | 3 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Operations

Communication and Responses

Manufacturing > Energy and Chemical Plant > Safety and Legislation for Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|------|---|-------|--------|-----------------|
| 9621 | Identify, explain, and use petrochemical industry symbols, signs, and terminology Identify, explain, and use energy and chemical industry symbols, signs, and terminology | 2 | 2 | B |
| 9631 | Use personal protection equipment in a petrochemical workplace Demonstrate knowledge of and use personal protection equipment in an energy and chemical plant | 2 | 2 | B |

| ID | Title | Level | Credit | Review Category |
|-------|---|-------|--------|-----------------|
| 24039 | Demonstrate knowledge of and use a Personal Evacuation System in the Petrochemical Industry Demonstrate knowledge of and use a Personal Evacuation System on an offshore platform | 2 | 3 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

| ID | Title | Level | Credit | Review Category |
|-------|--|-------|--------|-----------------|
| 9486 | Identify and apply quality management processes in a petrochemical workplace | 3 | 4 | D |
| 9535 | Conduct satellite shut downs and start ups in a petrochemical workplace | 4 | 5 | D |
| 9589 | Repair and replace valves in a petrochemical workplace | 4 | 4 | D |
| 9591 | Use hydro testing equipment in a petrochemical workplace | 4 | 4 | D |
| 9597 | Undertake corrosion inspection in a petrochemical workplace | 4 | 10 | D |
| 9601 | Perform and document routine process tests in a petrochemical workplace | 3 | 4 | D |
| 9609 | Monitor atmospheric emissions in a petrochemical workplace | 3 | 3 | D |
| 9613 | Manage a major environmental incident in a petrochemical workplace | 6 | 7 | D |
| 18285 | Control spills and emissions in a petrochemical workplace | 4 | 6 | D |
| 18286 | Control hazardous substances and waste materials for disposal from a petrochemical workplace | 4 | 7 | D |
| 18422 | Utilise a distributed control system in a petrochemical workplace | 3 | 4 | D |
| 19417 | Demonstrate knowledge of gas testing in a petrochemical workplace | 2 | 3 | D |

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

Manufacturing > Energy and Chemical Plant > Monitoring of Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|-------|---|-------|--------|-----------------|
| 9506 | Conduct a sample analysis in a petrochemical laboratory Demonstrate knowledge of and conduct a sample analysis in an energy and chemical plant laboratory | 4 | 6 | B |
| 9592 | Evaluate performance of batch process and production equipment in a petrochemical workplace Prepare production process equipment, and maintain and restore process conditions in an energy and chemical plant | 3 | 7 | B |
| 18725 | Monitor, analyse, and respond to deviations in a petrochemical process Monitor, analyse, and respond to process deviations in an energy and chemical plant | 5 | 12 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

Manufacturing > Energy and Chemical Plant > Operation of Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|-------|---|--------|--------|-----------------|
| 9587 | Operate product separation equipment in a petrochemical workplace Demonstrate knowledge of and operate product separation equipment to separate product in an energy and chemical plant | 4 | 10 | B |
| 9607 | Prepare chemicals for batch production in a petrochemical workplace Describe chemical mixing safety, and use chemicals for batch production in an energy and chemical plant | 3 | 3 | B |
| 9616 | Control emergency and unplanned shut downs in a petrochemical workplace Demonstrate knowledge of and control emergency and unplanned shutdowns in an energy and chemical plant | 5 | 12 | B |
| 18423 | Demonstrate knowledge of distillation equipment in a petrochemical workplace Demonstrate knowledge of distillation equipment in an energy and chemical plant | 4 3 | 12 | B |
| 18733 | Operate equipment for distillation in a petrochemical workplace Operate equipment for distillation in an energy and chemical plant | 5 4 | 8 | B |
| 19418 | Demonstrate basic knowledge of chemistry used in a petrochemical workplace Demonstrate basic knowledge of chemistry relevant to energy and chemical processes | 2 | 4 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Process and Product Management

Manufacturing > Energy and Chemical Plant > Safety and Legislation for Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|------|---|-------|--------|-----------------|
| 9617 | Punch list, commission, and optimise new equipment in a system in a petrochemical workplace Describe and punch list, commission, and optimise new equipment in a system in an energy and chemical plant | 4 | 7 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Product Transmission and Transfer

| ID | Title | Level | Credit | Review Category |
|------|--|-------|--------|-----------------|
| 9574 | Carry out gas testing using Draeger tube-type equipment in a petrochemical environment | 3 | 1 | D |
| 9584 | Conduct product transfer at a petrochemical marine terminal | 4 | 6 | D |

Engineering and Technology > Petrochemical Industry > Petrochemical Product Transmission and Transfer

Manufacturing > Energy and Chemical Plant > Monitoring of Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|------|--|-------|--------|-----------------|
| 9553 | Inspect pipeline stations in a petrochemical workplace Inspect pipeline stations in an energy and chemical plant | 3 | 3 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Product Transmission and Transfer

Manufacturing > Energy and Chemical Plant > Operation of Energy and Chemical Plant

| ID | Title | Level | Credit | Review Category |
|------|--|--------|--------|-----------------|
| 9582 | Conduct road or rail tanker loading activities in a petrochemical workplace Demonstrate knowledge of tanker loading and safety equipment, and load product in an energy and chemical plant | 4 3 | 3 | B |
| 9583 | Manage product storage and transfer facilities in a petrochemical workplace Demonstrate knowledge of and manage product storage and transfer facilities in an energy and chemical plant | 4 | 6 | B |
| 9585 | Conduct pigging activities in a petrochemical pipeline Demonstrate knowledge of and conduct pigging activities in an energy and chemical pipeline | 3 | 3 | B |
| 9586 | Transfer petrochemical bulk product by pipeline Prepare for and transfer energy and chemical bulk product by pipeline | 3 | 4 | B |

Engineering and Technology > Petrochemical Industry > Petrochemical Well and Wellhead Operations

| ID | Title | Level | Credit | Review Category |
|------|---|-------|--------|-----------------|
| 9529 | Prioritise and optimise well flows at a petrochemical wellhead | 4 | 19 | D |
| 9530 | Conduct well testing and sampling at a petrochemical wellhead | 4 | 4 | D |
| 9532 | Prepare for workovers at a petrochemical wellhead | 5 | 12 | D |
| 9533 | Demonstrate knowledge of, and operate, artificial lift equipment to optimise production at a petrochemical wellhead | 4 | 6 | D |
| 9534 | Hydro test a petrochemical well | 4 | 3 | D |
| 9536 | Undertake petrochemical wellhead maintenance activities under supervision | 3 | 4 | D |
| 9537 | Replace faulty petrochemical wellhead equipment | 4 | 8 | D |
| 9539 | Undertake well enhancement operations at a petrochemical wellhead | 4 | 17 | D |
| 9540 | Isolate a petrochemical well and prepare it for wireline work | 4 | 4 | D |