



Australian Government

Assessment Requirements for SFIAQU510 Design a recirculating aquaculture system

Release: 1

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Modification History

Release	Comments
Release 1	This version released with SFI Seafood Industry Training Package Version 1.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has developed a design for a new recirculating aquaculture system, or upgrade of a recirculating aquaculture system, on at least one occasion, including:

- determining system requirements based on research and facility requirements
- producing technical specifications and procuring drawings or plans
- preparing detailed capital and operational budgets
- reviewing and benchmarking proposed system against existing systems.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- key features of aquatic engineering principles, hydrology and water dynamics
- mechanical and technical aspects of recirculation systems, including energy use, mass balance, water hydraulics and flow, and pumps and pipe work
- relationships between inputs and outputs of recirculation systems, particularly biomass, size classes and quantity of feed
- features of automatic control and monitoring systems
- waste management, effluent treatments and other by-product uses (e.g. hydroponics and fertilisers) and environmental issues
- insulation and temperature control in an indoor facility, including air flows and ventilation (e.g. condensation, carbon dioxide and ozone)
- methods of customisation and retrofitting of components
- purchase of off-the-shelf items or improvising with existing items
- biosecurity aspects of recirculating aquaculture system
- biology of stock, and environmental and husbandry requirements within recirculating aquaculture systems to achieve growth targets

- importance of optimised production to achieve sound economic outcomes
- opportunities for cost reductions
- laws and regulations relating to permits and operation of aquaculture facilities
- risk identification, assessment and mitigation or management related to aquaculture systems
- forward planning and risk management for events, such as blackouts, brownouts and equipment breakdowns.

Assessment Conditions

Assessment of skills must take place under the following conditions:

- physical conditions:
 - skills must be demonstrated in an aquaculture workplace or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - technology for researching and preparing and presenting information
- specifications:
 - plans and specifications for a recirculating aquaculture system
 - specifications for high technology water treatment components
 - workplace business plan and budget.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

Companion Volumes, including Implementation Guides, are available at VETNet: -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=e31d8c6b-1608-4d77-9f71-9ee749456273>