Aquila Nuclear Engineering

CONTAINMENT

CASE STUDY

PROJECT TITLE: **INNER GLOVE BOX**
CLIENT: **NUCLEAR RESEARCH AND CONSULTANCY GROUP (NRG)**

AIMS & OBJECTIVES

Aquila was awarded the contract to design, manufacture and factory test a stainless steel Inner Box, including feedthrough for utilities, and a Support Frame. The Inner Box was designed to be installed in a Hot Cell, used for the implementation of a new isotope production line.

ABOUT THE CLIENT

NRG (Nuclear Research and consultancy Group) is the nuclear service provider in the Netherlands. NRG operates five nuclear facilities/ laboratories, each providing a unique set of irradiation services, either independently or in combination. The irradiation chain consists of the NRG activities in the facilities in Petten, from procurement of raw materials up to the worldwide logistics and transportation of nuclear materials. NRG products help thousands of patients worldwide every day with respect to both diagnostics and therapeutic applications of nuclear medicine. Through NRG's irradiation chain, many different medical products are supplied worldwide.

PROJECT OVERVIEW

Aquila was awarded the contract to design, build, factory test and deliver a complete Inner Box Hot Cell with Support Frame, including all necessary attachments and provisions. This included seals for all connections, transparent panels, Support Frame, transportation provisions, lifting provisions, inside work (i.e. shelves), and build drawings and documentation.

The Inner Box, supplied complete with mobile Support Frame, was sized and designed to fit inside the shielded Hot Cell G2 of the Hot Cell Laboratory within the NRG facility in Petten. This was to replace an existing box which was manufactured from plastic to incorporate many of the existing containment features. It is introduced into the cell via the removable back cell wall and designed to maximise the workspace available within the containment.

The internal side walls of the Inner Box are fitted with shelving to allow for storage of tools and other equipment. This tooling is readily accessible via the manipulators, and the shelving is easily removable to allow for cleaning. Features are provided within the Inner Box containment for the mounting of internal process equipment and supplied with plates to prevent objects falling into the base of the containment.

The Inner Box and mobile Support Frame are manufactured from stainless steel grade 316L, internal corners are radiused and welds dressed to provide a smooth de-contaminable finish.

The containment has been designed to achieve a leak tightness in accordance with class 2 ISO 10648-2 and the area within the containment has been classified as class 4 according to ISO 17873.

SUMMARY

An excellent example of working in collaboration with our client, NRG, in providing a full turnkey containment solution to support the production of isotopes used in nuclear medicines.

Pragmatic, cost effective solutions, always

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ACCREDITATIONS

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