

BHP BILLITON

Final Internship Report 2011

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Abstract

BHP Billiton Worsley Alumina and Murdoch University have a strong relationship, and as a result a selection of students studying their final year of Instrumentation and Control Engineering have the opportunity to complete an internship at the Worsley Alumina Refinery, located in the South West region of WA. The purpose of this report is to present the work completed on assigned projects during the internship.

In order to provide a substantial contribution to the project work, an understanding of the refinery's process and operations, overall control system and the tools utilised by control engineers on site was required. A summary of this background information is detailed within this report.

This report summarises the work completed on all major projects assigned during the time spent at the Worsley refinery. The project work completed covers a wide range of Process Control applications from the design of operator graphics to configuring networks. A contribution has been made to six projects which are listed within the report. Four projects will be covered in greater detail, highlighting required background information, methodologies applied, project constraints and a description of the projects' outcomes. The following projects to be discussed in greater detail are as follows;

- Experion Development Test System
- Reclaimer System Faults
- E&G Commissioning - Bauxite Shuttle Conveyors
- E&G Commissioning - Sulphate Removal Filters

This report will also cover the work on the remaining two projects and additional work completed outside of the assigned projects. Brief project summaries are provided for the migration of lab update values to Experion and the fault reset functionality for the alumina load out sequence at the Bunbury port.

The internship allows the student to gain experience with industry projects that a Process Control engineer is involved with on a daily basis, creating an invaluable learning experience. This will help the student apply the knowledge gained from university and to develop skills needed for the workplace personally and professionally.

Disclaimer

All of the work discussed in this report is the work of the author unless otherwise referenced.

I declare the following to be my own work, unless otherwise referenced, as defined by Murdoch University's policy on plagiarism.

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Elliot Payne

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I would firstly like to thank BHP Billiton Worsley Alumina Pty Ltd for providing the opportunity to complete an internship with their Process Control engineering group. This internship has given me the chance to be involved with first hand, real world Process Control engineering projects.

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