Douglas North 66/11kV Substation and Power Supply System

Environmental Assessment
Under Part 3A Environmental Planning & Assessment Act

February 2007

Prepared by Olsen Environmental Consulting Pty Limited

Information Statement

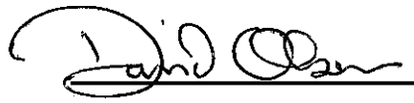
Olsen Environmental Consulting Pty Limited has prepared this Environmental Assessment based on information provided by BHPBilliton Illawarra Coal Pty Limited.

To enable a full environmental assessment to be undertaken, various reports have been prepared by specialist consultants in the areas of fauna, flora, acoustics, visual, archaeology and heritage. Olsen Environmental Consulting Pty Limited has relied on this information in preparing this Environmental Assessment.

David Olsen, Director of Olsen Environmental Consulting Pty Limited prepared this Environmental Assessment. David holds a Bachelors Degree in Agricultural Science with Honours.

CERTIFICATION

I certify that I have prepared this Environmental Assessment for the Douglas North 66/11kV Substation, and to the best of my knowledge, it is true in all material particulars and does not, by its presentation or omission of information, materially mislead.



David Philip Olsen	16.2.07
Name.	**Date**

Signature.

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EXECUTIVE SUMMARY AND CONCLUSION

This document is an Environmental Assessment of the Douglas North 66/11kV Substation Station Project to be undertaken by BHPBilliton Illawarra Coal (BHPBIC). It has been prepared to meet the requirements of Part 3A of the Environmental Planning and Assessment Act 1979.

Section 1 introduces the main aspects of the Project, which will be located approximately 1.0km east of Douglas Park and just off Moreton Park Road. The Substation is located approximately 170m from the nearest residence.

The Project addresses existing and future power supply issues for Douglas Mine. Medium to long-term benefits will also flow to the local community by way of more efficient and reliable power distribution.

Section 2 describes the Project and its justification. The Project will improve the distribution of 66kV power in the district and will also minimise the distance that 11kV power is transferred within Douglas Mine. This will enable the Douglas Mine to develop economic operations and will ensure coal reserves can be developed and that the Mine remains viable and operational.

The Project is a typical electricity supply distribution Substation commonly observed throughout the State. The Visual Impact Study Report prepared by Maurice Hayler's in Appendix V includes a number of artist impressions and photographs of existing facilities that provide a clear understanding of what the Substation will look like.

Power will be transformed in the Substation from 66kV to 11kV. It will then be delivered underground to Douglas Mine via a purpose driven borehole. An additional two boreholes will be drilled to enable future cables and services to connect to the underground mine power supply system.

Access to the site will be via Moreton Park Road and along a private access track.

The property on which the Substation will be built is owned by the proponent, BHP Billiton Illawarra Coal Holdings Pty Limited.

Up to 20 people will be on site during construction, which will take approximately 5.5 months followed by 1.5 months commissioning. Once built, the facility should generally be self-operating and will require approximately one inspection per week for monitoring and maintenance purposes.

Section 2.2 investigates the alternatives to the proposed Project. The Project is the only alternative that rectifies the problems with the local power distribution system, saves energy by transforming the power from 66kV to 11kV closer to its point of use, and enables longer-term development of the coal resources in the Douglas Mine.

Section 3 details the Environmental Planning background for the Project. The Project is being assessed for approval by the Minister for Planning under Part 3A of the Environmental Planning and Assessment Act 1979.

The land is zoned Rural 1A under the Wollondilly Local Environmental Plan and the proposed Project is permissible on the land pursuant to this Plan.

Section 4 outlines the approvals required from other government agencies. The current Douglas Mine Environmental Protection Licence will be modified to cover operational activities of the Substation. A mining lease for the site will be obtained under the Mining Act 1992 from the Department of Primary Industries Mineral Resources.

Section 4 also outlines the responses to the Project of various relevant groups, including government agencies and the community. The general response has been one of conditional support. Consultation with the community is ongoing.

Section 5 details the environmental impact assessment of the Project. The various issues addressed in Section 5 are summarised in the following paragraphs:

Dust. Any dust generated during construction and the operational phases of the project will be insignificant.

Surface Water Quality. Sediment controls built in accordance with the Landcom publication, "Soils and Construction" will be implemented to control surface water quality. A Site Water Management Plan will be developed and implemented.

Soils. Topsoils will be stored for use in rehabilitation.

Acoustics. Noise levels emitted during the construction and operation of the Douglas North 66/11kV Substation will meet all State Guidelines. Predicted noise levels could not be defined as offensive. During construction all equipment will be checked and maintained to ensure acceptable noise characteristics. Local residents will be advised prior to the carrying out of construction activities.

Flora and Fauna. The proposal will involve limited clearing affecting approximately 0.2ha. A Species Impact Statement under the Threatened Species Conservation Act or a Referral for Matters of National Significance under the Threatened Species Conservation Act and the Environment Protection and Biodiversity Conservation Act were not necessary for any threatened flora or fauna within the area of the proposed activities. The proposed works are unlikely to have a significant impact on any threatened species, endangered ecological communities or populations. However, commitments are made to minimise any disturbance on the ecological values of the area.

Traffic. Due to the small number of employees and the limited construction time, significant traffic impacts are not expected.

Waste Management. All waste will be disposed of at appropriately licensed facilities off site. Recycling will be encouraged.

Electromagnetic Field Effects. These are not expected as the proposed works will be built to comply with the National Health and Medical Research Council (NHMRC) guidelines for the exposure of humans to Electric and Magnetic Fields.

Lighting. Lighting will be designed and constructed to minimise off-site spillage and to avoid lights shining directly towards residences.

Archaeology, History and Heritage. One Aboriginal site (MPR1) occurs near the proposed Substation site. An archaeological testing programme will be undertaken in accordance with the Cultural Heritage Management Plan in Appendix VII. The testing programme will determine the nature of any other subsurface archaeological material that may be present. MRP1 will have a physical barrier surround to prevent accidental disturbance or damage.

Visual Effects. Implementing a number of recommendations will mean that it is unlikely that the proposed Substation would be greatly noticeable or offensive to a general member of the public when viewed from the surrounding area.

Section 6 describes the consultation undertaken for the Project, the process and issues raised

Section 7 describes the Environmental Management System that BHPBIC will implement to ensure appropriate environmental management of the Project.

Section 8 is a draft Statement of Commitments, which indicates the measures BHPBilliton will undertake to minimise impacts on the environment if the Project is approved.

Section 9 provides a summary of the Director General's Requirements together with information on where these requirements are addressed in this Environmental Assessment.

Appendices I to V contain all the supporting specialist consultant reports. Appendix VI contains the Director General's Requirements for this Environmental Assessment. Appendix VII contains the Cultural Heritage Management Plan for the Substation Site

The site is owned by the proponent and is suitable for the proposal. The site is located suitably to ensure the Project objectives can be achieved. Benefits will flow to both the proponent and the local and state community through ongoing efficient coal mining activity and improvements to the local electrical distribution system. In conclusion, this Environmental Assessment does not identify any environmental issues that would preclude conditional approval of the Project.

1. INTRODUCTION

As part of the ongoing operations of the Douglas Mine, BHPBIC plans to install the new Douglas North 66/11kV Substation and power supply system approximately 1.0km east of Douglas Park.

The Substation will enable up to 25MVA supply of power to be delivered underground at the Douglas Mine at 11kV.

The Project will have immediate benefits for the Douglas Mine and will also provide long-term benefits to the community through more efficient distribution of power via the State electricity grid in the Douglas Park area.

The general location of the proposed Substation is shown on Figure 7.2 Version 5. Details of the site layout are shown in Figure 7.3 Version 5 and Drawing KO512-002 Revision E1.

BHPBIC is seeking approval to construct and operate the Douglas North 66/11kV Substation and associated service boreholes and power supply system. The proposed works are required to ensure the ongoing operation of the Douglas Mine.

The construction and operation of the Douglas North 66/11kV Substation and associated service boreholes is categorised as development for the purpose of mining related works for the purposes of Clause 6 and Item 5 of Schedule 1 of the State Environmental Planning Policy (Major Projects) 2005. Consequently, it is a "project" for the purposes of Part 3A of the Environmental Planning and Assessment Act 1979 and requires approval from the Minister for Planning under Part 3A.

In October 2006, BHPBilliton Illawarra Coal Holdings Pty Limited lodged a Project Application with the Department of Planning. A Preliminary Assessment supported the Project Application. The Preliminary Assessment was prepared in accordance with existing Department of Planning Guidelines and requirements.

The Department of Planning reviewed the Project Application and Preliminary Assessment and provided the Director General's environmental assessment requirements (DGRs) for the Project. The DGRs were prepared by the Department of Planning having regard to any relevant existing guidelines, in addition to the information included in the Project Application and Preliminary Assessment. The DGRs are included in Appendix VI of this Environmental Assessment. Section 8 summarises the Director General's Requirements and indicates the sections in this Environmental Assessment in which they have been addressed.

The DGRs nominate the requirements for the Environmental Assessment, key issues to be addressed, the level of assessment required in relation to these issues and any other requirements the Director General determines as being relevant.

This Environmental Assessment of the Project has been prepared to address the issues identified in the DGRs.

2. PROJECT DESCRIPTION AND JUSTIFICATION

2. 1 Description and Justification

BHPBilliton Illawarra Coal (BHPBIC) is currently developing Douglas Mine Area 7 in preparation for longwall extraction. The current mine layout identifies potential for the development and extraction of 18 longwall panels in Douglas Mine Area 7. The commencement of the first of these, known as Longwall Panel 701 (LW701) is currently planned for November 2007.

BHPBIC has identified the need to upgrade the underground high voltage power reticulation system to provide a reliable and efficient power supply to support the longwall operations and the ongoing development in the Douglas Mine Area 7.

The current underground high voltage reticulation system operates at 6.6kV. Due to a combination of the supply voltage, long reticulation distances (currently 6km) and inadequate cable sizes, the system lacks sufficient capacity to support the longwall operations in Douglas Mine Area 7.

Power modelling of the existing 6.6kV reticulation systems at both Douglas and Appin Mines has demonstrated that the use of either system in their current form to supply power to the Douglas Mine Area 7 longwall panels will result in severe overloading and extremely poor voltage regulation. The end result will be inadequate longwall capacity, poor equipment performance, poor reliability and potential equipment failures.

Consequently, an upgrade of the underground high voltage reticulation system is required to meet the demands of longwall operations in Douglas Mine Area 7 in addition to ongoing development operations and supporting conveyor systems.

The primary objective of the upgrade is to provide a power supply and associated services capable of sustaining the efficient operation of the longwall development and conveyor equipment for the life of Douglas Mine Area 7.

The proposed solution to this power supply issue involves a number of components that have to be addressed under different sections of the Environmental Planning and Assessment Act 1979. While this Environmental Assessment focuses on the Douglas North 66/11kV Substation and associated works, this section includes a description of the entire proposed solution in order to enable the development to be understood in context.

In summary, the entire proposed solution requires:

- An upgrade to an existing Integral Energy Switching Station at Douglas Park. This will be undertaken by Integral Energy,

- The upgrade of an existing, but currently unused 33kV power line that will deliver 66kV power to a purpose built 66/11kV Substation to be undertaken by BHPIC, and,

- Installation of that 66/11kV Substation at Douglas North on land owned by BHPBIC and undertaken by them. This includes associated services and infrastructure that will enable access for construction, maintenance and operation of the 66/11kV Substation.

The Capital investment by BHPIC required for installation of the various components of the Project that they are responsible for is approximately $8M. Integral Energy will meet the cost of the upgrade of the Douglas Switching Station.

Installation and operation of the Douglas North 66/11kV Substation and associated services and infrastructure will be addressed under Part 3A of the Environmental Planning and Assessment Act 1979. The Minister for Planning will be the Determining Authority for this part of the proposal. This Environmental Assessment is a requirement of Part 3A.

Upgrading the existing 33kV power line will be addressed under Part 5 of the Environmental Planning and Assessment Act. A separate Review of Environmental Effects will be prepared for the proposed upgrade and Integral Energy will determine the assessment.

Figure 7.2 Version 5 shows the location of the all the above proposals. Figure 7.3 Version 5 and Drawing KO512-002 Revision E1 show the location of the components of the proposal that are being addressed under Part 3A of the Environmental Planning and Assessment Act 1979. This Environmental Assessment will now address the Part 3A components in detail.

2.2 Options

Various response options were investigated to identify the best solution to meet both the short term objective for the commencement of Longwall 701 and the long term life of Douglas Mine Area 7. This investigation included options involving both 6.6kV and 11kV power reticulation systems. Numerous options were considered which have been short listed to those summarised in the following sections.

2.2.1 Maintain Existing 6.6kV Reticulation

There were two Options involving retention of the existing 6.6kV reticulation system.

The first of these involved the initial installation of large 6.6kV feeder cables from either Douglas or Appin Mine Surfaces in order to supply longwall panels. This would be followed by installation of a remote 66/6.6kV Substation and an associated borehole cable located approximately 1.2km north west of the preferred Douglas North site. This would eventually be supported by a second surface transformer bay and borehole cable in order to maintain adequacy of supply.

The second Option involved retention of the existing 6.6kV reticulation system and would have required construction of the 66/6.6kV substation and associated borehole cables at the Douglas North site. This would also eventually require a second surface transformer bay and borehole cable to maintain supply.

2.2.2 Upgrading to 11kV Reticulation

There were three Options involving upgrading to an 11kV reticulation system.

The first of these was located at the existing Douglas Mine Surface Site. It would have involved the immediate upgrading of the underground reticulation system to 11kV. This would have been followed by the installation of a 66/11kV borehole cable at the existing Douglas Mine Surface Site supported by heavy cable underground to efficiently transfer the power to the remote longwall panels underground. This Option would also eventually require a second surface transformer bay and borehole cable to maintain supply.

The second and third Options involving upgrading to an 11kV reticulation system were similar to each other. Both these Options would require:

- The upgrade of the underground reticulation system to 11kV,

- The installation of a remote 66/11kV substation and borehole cable located at the Douglas North 66/11kV Substation Site, and,

- The eventual installation of a second surface transformer bay and borehole cable to maintain supply.

The only difference between the Options would involve the temporary supply of 6.6kV from Appin Mine Pit Bottom. This temporary supply is included in the preferred Option discussed and assessed in this Environmental Assessment.

Implementation of the preferred Option will have Longwall 701 being supplied via the temporary supply from Appin Pit Bottom and Longwall 702 being supplied via the new Douglas North 66/11kV Substation. If the temporary supply is not made available Longwall 701 would need to be supplied with power via the proposed Douglas North 66/11kV Substation. This would result in significant production delays.

2.2.3 Preferred Option

The preferred Option will involve upgrading to an 11kV reticulation system and will be developed in three stages. These Stages have been identified as 0, 1 and 2.

Stage 0 will involve the installation of a temporary 6.6kV supply to LW701 from the existing Appin reticulation system and will include:

- 3,960m of cable from Appin Pit Bottom to Douglas,
- 2,860m of cable from Douglas to LW701 entry, and
- 2 x High Voltage circuit breaker units to sectionalise the supply run from Appin to LW701.

Stage 1 of the preferred Option will include:

- Extension of the existing Integral Energy Douglas Park Switching Station,
- Construction of a 66kV overhead power line between the Switching Station and the Douglas North Mine substation (including the removal of the existing 33kV line);
- Construction of the Douglas North 66/11kV Mine Substation, including one 12.5MVa transformer bay with provision for a second,
- Installation of one 11kV borehole power supply(via Hole 1 Figure 7.3 Version 5),
- Underground 11kV switchgear,
- Underground cabling to the entry of Longwall 702, and,
- Remote monitoring and communications.

Stage 2 provides system redundancy, increased system capacity and a reduction in impedance losses necessary to achieve the reticulation distances for the extent of Douglas Mine Area 7 and includes:

- Supply and installation of a second 12.5MVA transformer bay in the surface mine substation, and,
- Supply and installation of a second borehole cable (Hole 2 Figure 7.3 Version 5).

Stage 0 work will occur underground within the Mining Lease and does not require Development Consent. The various components of Stages 1 and 2 will require assessment and approval as discussed in Section 2.1.

A third borehole for possible use for gas extraction could be established on site near the cable boreholes (Refer Hole 3 Figure 7.3 Version 5).

2.3 Landholder and Stakeholder Arrangements

The location of the proposed Douglas North 66/11kV Substation is approximately 4.2km from the existing Douglas Mine Surface.

The Douglas North 66/11kV Substation Site is owned by Endeavour Coal an associated company of BHPBIC and is leased to another entity.

Access to the works will be via Moreton Park Road with heavy vehicle access for construction limited to the Menangle (northern) end of Moreton Park Road.

Some limited clearing of native vegetation will be necessary for the Mine Substation, the mandatory fire barrier around the substation, the buried 11kV cables, the new boreholes and the associated access tracks.

2.4 Douglas North 66/11kV Substation

The Douglas North 66/11kV Substation installation is proposed to provide the 11kV power supply to underground via borehole cables. This substation will be located on BHPBIC property fronting onto Moreton Park Road.

Figure KO512-002 Revision E1 shows the conceptual layout of the Substation.

The initial stage of the work for the 66/11kV substation will comprise:

- Site civil works for 2 transformer bays,
- Isolation switches and 66kV bus connections for 2 transformer bays,
- 1 x 66kV circuit breaker and combined metering unit,1 x 66/11kV, 10/12.5MVA transformers with on load tap changers, and,
- Associated electrical equipment, switch room and 11kV cabling.

An all-weather gravel road, approximately 4m wide will be constructed to enable access to and from Moreton Park Road.

Stage 2 includes the installation of the second transformer bay equipment, including an identical transformer.

Minimal vegetation clearing is required but needs to be sufficient to allow the installation of all facilities including suitable access to the site and to provide an adequate fire break.

2.5 Surface to Underground 11kV Connection

The proposed site for the services boreholes is on the same lot as the Douglas North 66/11kV Substation. A Gas Monitoring Shed (approximately 3m x 3m) will be built adjacent to the boreholes.

Approximately 100 to 150m of cabling is required for each stage between the substation and the boreholes. This cabling will be buried in a trench. Ultimately, two circuits of 11kV cabling will be required, one for each borehole cable in each Stage of the work.

2.6 Construction Works

The general construction method for the Substation will consist of offsite fabrication of components, which will then be delivered to the site for assembly. There will not be any on-site worker accommodation. Temporary buildings for administration, meals and toilets/bathhouse will be provided and removed at the completion of construction.

Once constructed, the Substation will be generally self-operating. Access will be required approximately once per week to enable inspections for monitoring, maintenance and repairs.

Construction must commence in time to enable Longwall 702 to receive power from the proposed substation. At this stage, construction is planned to commence in July 2007, continue over a 5.5-month period followed by 1.5 moths commissioning the facility. It is planned to have the facility ready for service in early February 2008.

During construction, up to 20 employees will be on site. The typical construction workforce will range from 10 to 20. Earthworks, establishing foundations, various civil works and borehole drilling operations will be in progress for a period of approximately 12 weeks.

All components will be fabricated off-site and will be delivered to the site for installation immediately the earthworks and associated activities outlined above are completed. Installation is expected to take 8 weeks and involve an on-site workforce of between 10 and 15 employees.

Once the components are in place installation of cabling and termination works, which involves indoor and exterior electrical installations will be completed. This is scheduled to occur over a period of 6 weeks and will require 20 employees on site.

The installation will require commissioning and testing prior to being brought on-line. This will require a workforce of 20 people for a period of 4 weeks.

Construction hours will be 7am to 6pm Monday to Friday and 7am to 1pm Saturdays.

Although there will not be any construction undertaken on Sundays or public holidays, there may be indoor wiring and termination activities, as well as commissioning tests, undertaken on these days to coincide with Integral Energy and Douglas Mine requirements.

The Substation will operate for at least 15 years following construction and commissioning.

3. ENVIRONMENTAL PLANNING BACKGROUND

The site is located within the Wollondilly Shire Local Government Area and is zoned Rural 1(A1) under the Wollondilly Local Environmental Plan 1991. The proposed development is characterised as development for the purpose of mining and is permissible in the Rural Zone with development consent.

The land is located within a Mine Subsidence District within the meaning of Section 15 of the Mine Subsidence Compensation Act 1969 and BHPBilliton Illawarra Coal (BHPBIC) will consult with the Mine Subsidence Compensation Board in relation to proposed building standards. Longwall extraction has occurred in the area beneath the proposed works.

The land is subject to the provisions of the Sydney Regional Environmental Plan No. 20 – Hawkesbury-Nepean River. The Project is not inconsistent with this instrument.

3.1 Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River

The aim of this Plan is to protect the environment of the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context.

The Plan identifies matters to be considered when assessing development in the Hawkesbury-Nepean River Catchment.

In summary, the matters related to this proposal are associated with total catchment management, environmentally sensitive areas, water quality and quantity, cultural heritage, flora and fauna, riverine scenic quality and a number of other matters not relevant to this proposal. The relevant matters are discussed generally in Section 5 and the Specialist Consultant Reports included in Appendix III to V.

The proposed development does not significantly impact on any of these identified matters.

3.2 Development Control Plans

Wollondilly Shire Council Officers advised that there is a number of Development Control Plans that apply to land zoned Rural 1(A1) that may be relevant to this Project. These are as follows:

- DCP No 7-Off street Parking,
- DCP No 21-Earth Dams,
- DCP No 36-Development in Rural Zoned Areas,
- DCP-Design Code, and,
- DCP-Wollondilly Agricultural Lands.

DCP No 7-Off street Parking. This DCP defines the provision of parking spaces for developments in rural areas. There are no provisions for items of infrastructure, and therefore it is not applicable to this development.

DCP No 21-Earth Dams. This DCP relates to the design and construction of water supply dams in rural areas. The proposed development does not include any such dams. It may

include small sedimentation ponds designed in accordance with the Landcom publication, "Soils and Construction" Volume 1, Fourth Edition, dated March 2004.

DCP No 36-Development in Rural Zoned Areas. This DCP relates more to houses, driveways and agricultural development and is not relevant to this Project.

DCP-Design Code. This DCP addresses issues related to stormwater control from roads especially where the Council is likely to assume ongoing maintenance. It is not relevant to this Project.

DCP-Wollondilly Agricultural Lands. This DCP is similar to DCP 36 and it addresses issues related to agricultural developments. It is not relevant to this Project.

4. OTHER APPROVALS REQUIRED

Douglas Mine already holds an Environmental Protection Licence from the Department of Environment and Conservation (DEC) under the Protection of the Environment Operations Act 1997. This Department will be notified of the new Substation and the existing licence may be modified to accommodate any additional requirements that DEC may have.

A mining lease under the Mining Act 1992 will be acquired from the Department of Primary Industries Mineral Resources Division.

Due to the low predicted traffic numbers during construction and operation of the Project no approvals are required from the Roads and Traffic Authority. However, the Roads and Traffic Authority has been consulted in relation to the Project.

4.1 Wollondilly Shire Council

Wollondilly Shire Council submitted a letter to the Department of Planning in response to the Preliminary Environmental Assessment. A copy of the letter is attached to the Director General's Requirements included in Appendix VI.

The Council requested hours of construction be included in the Environmental Assessment . These hours have been included in Section 5.4.1.

The Council requested copies of the Flora and Fauna Report and the Archaeological report. These will be provided to Council as attachments to this Environmental Assessment.

A meeting was held with Planners from Wollondilly Shire Council to provide them with information the Project. It was agreed that the Project required approval under Part 3A of the Environmental Planning and Assessment Act 1979.

The Council officers raised a number of issues relating to the management of vegetation during construction and operation. These issues are addressed in Section 5.5 of the Environmental Assessment and in the Biosis Fauna and Flora Report included in Appendix III.

Council also expressed an interest in visual impact and archaeological issues. The issues are addressed in Sections 5.11 and 5.10 respectively. A Visual Assessment is included as Appendix V and the Archaeological report is included in Appendix IV.

Specific detail site issues raised by Council officers included;

- Provision of a water tank approved by Council,
- Council will not require any separate building application additional to information included in the Part 3A process,
- Sewerage should be of pump out type. A Biocycle type would not function properly at the predicted low usage rates. Council will need to approve the detail proposal for the sewerage system,
- The access gate off Moreton Park Road must be set back sufficient distance to avoid interruption to traffic flow on the road.
- Council advised BHPIC to seek Mine Subsidence Board approval as early as possible.

4.2 Integral Energy

Lengthy discussions have been undertaken with Integral Energy. They have advised that the required power is available from the supply system.

4.3 Local Community

Landholders in the immediate vicinity of the Project have been advised of the proposals. Their concerns related to general environmental issues with respect to noise dust and visibility. The nearest residents, located approximately 170m south west of the proposed Substation expressed concern about electromagnetic field effects from the substation as well as the power line that will serve the substation. Ongoing discussions are being held with these residents.

BHPBIC operates a very extensive community consultation programme for its mining activities in this area. BHPBIC supports the operation of the Appin Area Community Working Group (AACWG) and participate in the meetings of this group.

BHPBIC also operates an office in the Appin Business and Shopping Precinct. This office provides information to the community and operates as a meeting room for the community to discuss developments at Douglas, Appin and West Cliff Mines. A notice of this Project has been placed at this office to inform members of the local community about it.

BHPBIC has a 24 hour contact telephone line for the community to be able to contact the Mines if required.

These communication mechanisms will ensure timely community input into the approval, construction and monitoring of the development.

4.4 Department of Environment and Conservation

The requirements of the Department of Environment and Conservation are included in their letter attached to the Director General's Requirements, which are included in Appendix VI. In addition, a meeting was held with officers from this Department

The Department's main concerns related to threatened species, water quantity and quality, Aboriginal cultural heritage and noise and vibration. These matters are discussed in Section 5 of the Environmental Assessment. The Department indicated particular concern in relation to remnant vegetation and associated threatened species on the site. This matter is fully discussed in Section 5.5 and in Appendix III.

4.5 Department of Planning

Discussions have been held with Departmental Officers from the Major Developments Assessment Branch to clarify process and other issues relating to the new Part 3A approval process.

4.6 Roads and Traffic Authority

The Morton Park Road that provides access for the Project is a road owned and maintained by Wollondilly Shire Council. Due to the low predicted traffic numbers during construction and operation of the Project no approvals are required from the Roads and Traffic Authority. However, the Roads and Traffic Authority has been consulted in relation to the Project and BHPBIC will continue to liaise with them in relation to it.

4.7 Mine Subsidence Board

The Project will be undertaken within a Mines Subsidence District. The area beneath the Project has been fully mined and no further subsidence is expected. The Mine Subsidence Board will be consulted in relation to the building standards required to meet the Board's requirements. The final plans for the project will be submitted to the MSB for Approval.

4.8 Department of Natural Resources

Discussions were held with an officer from the Department of Natural Resources. Subsequent to the meeting the officer advised BHPIC that the Department of Natural Resources had no specific concerns additional to the environmental issues assessed to date.

5. ENVIRONMENTAL IMPACT ASSESSMENT

The following section addresses the environmental issues predicted in the Preliminary Assessment and those issues required to be assessed by the DGRs.

The following Table 4 was included in the Preliminary Assessment and provides a summary of the identified environmental issues and the level of assessment required.

TABLE 4 SUMMARY OF THE ISSUES AND THE LEVEL OF ASSESSMENT

What are the key issues? Consider the ▪ **Extent of the impacts** ▪ **Nature of the impacts** ▪ **Environmentally sensitivity of site** ▪	**What is the extent of the studies required to determine the level of risk?**	**What is the extent of the studies required to avoid, minimise or manage the impacts so the risks are acceptable?**
1. Dust control during construction and along access road.	Comparison with similar activities.	Identify and commit to implementing standard operating control measures.
2. Surface water quality management	Comparison with similar activities.	Identify and commit to implementing standard operating control measures. Preparation of Water Management Plan.
3. Soil management	Comparison with similar activities.	Identify and commit to implementing standard operating control measures. Preparation of Soil Management Plan.
4. Noise during construction and during operation associated with the transformer.	Undertake acoustic assessment of proposed activities in accordance with accepted EPA guidelines and requirements.	Undertake acoustic assessment of proposed activities in accordance with accepted EPA guidelines and requirements.
5. Fauna impacts.	Undertake fauna study in accordance with standard procedures.	Undertake fauna study in accordance with standard procedures.
6. Flora impacts.	Undertake flora study in accordance with standard procedures. Selective clearing around endangered species. Very small area cleared.	Undertake flora study in accordance with standard procedures.
7. Traffic impacts on Moreton Park Road.	Determine likely levels of traffic and compare with traffic volumes and RTA intersection guidelines.	Determine likely levels of traffic and compare with traffic volumes and RTA intersection guidelines.
8.Waste management	Determine waste streams and volumes and identify appropriate management response. Waste Management Plan.	Determine waste streams and volumes and identify appropriate management response. Waste Management Plan.

9. Electromagnetic field effects.	Obtain assessment from Integral utilising their extensive database and experience.	Obtain assessment from Integral utilising their extensive data base and experience. Incorporate requirements into planning.
10. Switchyard lighting effects.	Define acceptable levels and design accordingly.	Define acceptable levels and design accordingly.
11.Archaeological, historical and heritage implications.	Undertake archaeological and heritage study in accordance with appropriate requirements and incorporate findings into project design.	Undertake archaeological and heritage study in accordance with appropriate requirements and incorporate findings into project design.
12. Visual impact.	Undertake visual impact assessment by recognised architect.	Undertake visual impact assessment by recognised architect. Incorporate findings and recommendations into planning process.

5.1 Air Quality and Dust

It is likely that dust will be a potential issue only during the construction of the Douglas North 66/11kV Substation. During construction, a water cart will be used on site to reduce dust generation. This is a standard method of dust control during construction activities. Dust will be controlled to avoid unnecessary visual impact at the residence and to prevent dust impacts on vegetation close to the site.

The nearest residence is approximately 170m distant from the site and it is unlikely they would be affected by any dust falling on the residence.

5.2 Surface Water Quality

The site for the Douglas North 66/11kV Substation is located on a ridge line and will not be subjected to run on water.

A sedimentation fence will be constructed immediately down slope of the area disturbed by construction. Similar fences will be constructed down slope of any stockpiled soil materials.

The sedimentation fences will be installed in accordance with requirements as described in "Soils and Construction", hip pocket handbook, 1st Edition, dated March 2004.

Should any surface drains and/or sedimentation basins be required during construction, they will be constructed in accordance with the Landcom publication, "Soils and Construction" Volume 1, Fourth Edition, dated March 2004.

Sedimentation controls will be installed along the access road. These would include such things as sedimentation fences, water diversion structures and establishment of a vegetative cover. They will also be installed along the route of the underground cable between the Substation and the cable borehole. During the sinking of the borehole sedimentation controls will be installed around the drill site.

The construction contractor will prepare a Site Environmental Management Plan that will address site water management details

5.3 Soil Management

Topsoil from the area to be disturbed will be stripped and stockpiled at the commencement of construction. This topsoil will be used to resurface disturbed areas prior to revegetation.

The topsoil will be stockpiled in an area above the sedimentation fence located down slope of the site. The topsoil stockpile will have a downstream sedimentation fence unless it is located near the general site sedimentation fence.

Subsoil material will be moved around the site to provide for design cut and fill volumes. The topsoil will be returned to any cut and fill batters requiring revegetation.

The site will be seeded with pasture grass species consistent with those present in the existing improved pastures surrounding the site.

5.4 Acoustics

BHPBilliton Illawarra Coal (BHPBIC) commissioned Day Design Pty Ltd, Consulting Acoustical Engineers, to undertake an acoustic assessment of the Project.

Day Design has undertaken a number of similar assessments for Integral Energy and are experienced in this field. Day Design prepared two reports of their assessment. Copies of their Reports, titled "Construction Noise Impact. Douglas North Substation at Douglas Park NSW" and "Environmental Noise Impact. Douglas North Substation at Douglas Park NSW", both dated December 2006. These Reports are included in Appendices I and II of this Environmental Assessment.

5.4.1 Construction

The Day Design Report in Appendix I details the procedures and findings of their assessment of the predicted noise impact resulting from the construction of the Douglas North 66/11kV Substation. This report also assesses the construction noise impact associated with installation of the power line supplying power to the Douglas North 66/11kV Substation. The construction of this power line is being assessed separately from the construction of the Substation. The power line will be assessed under Part 5 of the Environmental Planning and Assessment Act 1979 and is subject to a Review of Environmental Factors in accordance with that Part.

In relation to the Substation, Day Design conclude that their measurements and computations show that the level of noise emitted by the proposed construction works complies with the construction noise criteria at the nearest and most affected receptor locations.

The closest residences to the proposed Substation are approximately 170m south west and approximately 270m north east of the Substation along Moreton Park Road.

Construction activities will occur:

- 7am to 6pm Monday to Friday,
- 7am to 1pm Saturday if inaudible in residential premises, otherwise 8am to 1pm, and,
- No construction work will take place on Sundays or public holidays.

The ambient noise at the nearest residences is dominated by traffic noise from the nearby Hume Highway during the day, evening and night.

The criteria for an acceptable construction noise level at nearby residences is defined in the EPA "Environmental Noise Control Manual". The anticipated construction period of the Douglas North 66/11kV Substation will not exceed 26 weeks. In these circumstances, the Manual defines acceptable L_{A10} construction noise levels as those not exceeding the background level by more than 10dBA when measured over a 15 minute period at the most affected residence. This criteria was used by Day Design in their assessment.

During the construction of the Substation, the greatest sustained level of noise emission will occur when several items of plant are used concurrently. The calculated construction noise levels under these circumstances are included in Table 5.1.

Table 5.1. Calculated $L_{eq,(15min)}$ Noise Levels at Receptor Locations due to Construction Activities on Site

Receptor Location	Acceptable Level	Calculated Level	Compliance
170m south west of the Substation along Moreton Park Road	61dBA	60dBA	Yes
270m north east of the Substation along Moreton Park Road.	61dBA	56dBA	Yes

The calculated sound pressure level at both Receptor Locations due to the Substation construction activities comply with the construction noise criterion of 61dBA during construction hours and are therefore acceptable.

Although noise control measures are not required for compliance with the construction noise criteria, Day Design recommended a number of basic administrative noise controls to further reduce noise impact. These are as follows:

- Equipment should be well maintained to avoid unnecessary squeaks, rattles and exhaust noise. If the noise level of an item of equipment is suspected of being out of specification as defined in Table 6.1 of the Day Design Report (Appendix I), the noise level of the equipment should be measured and the necessary maintenance action taken, and,

- Nearby residents should be informed of the construction works via letter drops and the contact details of the site manager should be provided to residents. In the event of a noise complaint, the site manager should immediately investigate and respond to the complaint.

These administrative controls will be implemented.

Day Design concluded their Report with the opinion that, during construction, the sound emitted from this development will not cause offensive noise as defined by the Protection of the Environment Operations Act 1997.

5.4.2 Operations

The Day Design Report in Appendix II details the procedures and findings of their assessment of the predicted noise impact resulting from the operation of the Douglas North 66/11kV Substation.

The main source of noise from the proposed Douglas North 66/11kV Substation is the transformer that will operate continually throughout the day and night.

Day Design concluded that the predicted level of noise from the operation of the proposed Douglas North 66/11kV Substation is within the Guidelines in the Environment Protection Authority's Industrial Noise Policy and is considered acceptable at all existing nearby residences. They also concluded that the Substation will not require any specific noise control measures to comply with the noise guidelines recommended in the NSW Industrial Noise Policy.

The calculated L_{eq} noise levels at the two nearest receptor locations during Substation operations are shown in Table 5.2

Table 5.2. Calculated L_{eq} Noise Levels at Receptor Locations

Receptor Location	Acceptable Level	Calculated Level	Tonal	Compliance
170m south west of the Substation along Moreton Park Road	44dBA	28dBA	No	Yes
270m north east of the Substation along Moreton Park Road.	44dBA	24dBA	No	Yes

At a distance of approximately 170m, the calculated sound pressure level at the nearest receptor location will be 28dBA, which is less than the annoyance criteria of 44dBA at night criterion and therefore acceptable.

Day Design conclude their Report with the opinion that, during operations, sound emitted from the proposed development will not cause offensive noise as defined by the Protection of the Environment Operations Act 1997.

5.5 Flora and Fauna

BHPBilliton Illawarra Coal (BHPBIC) commissioned Biosis Research Pty Ltd to undertake an assessment of the Project's impact on flora and fauna.

A copy of their Report titled "Flora and Fauna Assessment: Douglas North Substation" is included in Appendix III in this Environmental Assessment. This Report also assesses the flora and fauna impacts associated with installation of the power line supplying power to the Douglas North 66/11kV Substation. The construction of this power line is being assessed separately from the construction of the Douglas Park 66/11kV Substation. The power line will be assessed under Part 5 of the Environmental Planning and Assessment Act 1979 and is subject to a Review of Environmental Factors in accordance with that Part.

The Biosis Report details the process and methodology implemented to undertake the assessment. The aim of the Report is to describe a terrestrial flora and fauna study of the area around the Substation and to determine the impact of the Project on any matter of conservation significance.

This objective was achieved by the following:

- Conducting a literature review and database search for the study area,
- Providing a brief assessment of the habitat values of the study area,
- Undertaking targeted field surveys for threatened terrestrial species, populations (and/or their habitats) and ecological communities listed under the schedules of the Threatened Species Conservation Act 1995 (TSC), and/or the Environment Protection and Biodiversity Conservation Act 1999 (EPBC) that are known or likely to occur within the study area,
- Undertake Section 5A Assessments of Significance for threatened species, populations and ecological communities listed on the TSC Act and/or Assessments of Significance for threatened and migratory species listed on the EPBC Act that are either directly or indirectly impacted by the Project, and,
- Providing recommendations to minimise the environmental impacts of the proposed development.

5.5.1 Flora

The Substation site supports Shale Sandstone Transition Forest and Western Sandstone Gully Forest in varying condition, with disturbances such as the existing power line easement and farming activities fragmenting the existing bushland resulting in weed invasion. The native vegetation in the area is part of a riparian corridor along the Nepean River. The location of the identified vegetation communities is shown on Figure 3 in the Biosis Report (Appendix III).

The new Substation proposal will involve limited clearing affecting approximately 0.2ha directly and a further 0.6ha indirectly. The area of vegetation affected by the proposed clearing has been conservatively measured and is an overestimate. To compensate for maximum clearing proposed and resulting indirect impacts, BHPIC proposes to plant 0.6ha of the property with the main tree species of the Shale Sandstone Transition Forest and the Western Sandstone Gully Forest in existing cleared areas on then property. These plantings will be fenced to exclude grazing.

Shale Sandstone Transition Forest is listed as an Endangered Ecological Community on the TSC and EPBC Acts. An Assessment of Significance under the TSC Act and Significant Impact Criteria under the EPBC Act were carried out for this Community. Biosis concluded that a significant impact was not likely.

No threatened plant species were recorded within the study area. However, potential habitat for six threatened plant species occurs within the study area. The six threatened species recorded were Epacris purpurescens var. purpurescens, Grevillea parviflora spp. parviflora, Persoonia bargoensis, Persoonia hirsute, Pomaderris brunnea and Pultenaea pedunculata.

Assessments of Significance under the TSC Act and/or Significance Impact Criteria under the EPBC Act were prepared for these species. The Assessments concluded that the proposal is unlikely to have a significant impact, given that approximately 5,481ha of Shale Sandstone

Transition Forest and approximately 1,900ha of Western Sandstone Gully Forest has been mapped by the Department of Conservation within a 10km radius of the Substation site and that none of the species were recorded during the survey.

5.5.2 Fauna

The proposal is likely to modify potential breeding and foraging resources for the Red-crowned Toadlet listed on the TSC Act. Based on an Assessment of Significance, the proposal is unlikely to significantly impact on this species given the small area to be impacted the extent of potential habitat in the locality and the poor condition of the habitat in the area.

In addition to the Red-crowned Toadlet there were 22 threatened and/or migratory species with potential habitat within the study area. Biosis concluded that these species are unlikely to be significantly impacted by the proposal. They based their conclusion on the small area to be impacted and the extent of potential habitat in the immediate vicinity of the Substation. Biosis determined that it is unlikely that the proposal would result in the death or injury, or loss of limiting breeding and foraging resources for any of these threatened animal species. Consequently, Assessments of Significance under the TSC and EPBC Acts were not prepared for these species.

Biosis concluded that a Species Impact Statement under the TSC Act or a Referral for Matters of National Significance under the TSC and EPBC Acts were not necessary for any threatened flora or fauna within the study area for the proposed activities.

5.5.3 Recommendations

Biosis concluded that the proposed works are unlikely to have a significant impact on threatened species, endangered ecological communities or populations. However, they recommend that the following points are taken into consideration to minimise any disturbances on the ecological values of the study area:

- Adjustment of the location of the access track to avoid native trees,
- Where possible, trees with hollows should be retained. In both these cases clearing boundaries and trees to be retained will be identified and taped for easy recognition by a Botanist
- Proposed boreholes and access tracks should be located within existing cleared areas where possible,
- Appropriate sediment/erosion and drainage control devices should be utilised to prevent sediment laden run off and erosion which could potentially impact on the Nepean River and its tributaries,
- Disturbance to native vegetation should be minimised,
- Spreading exotic species propagules into the adjoining vegetation should be avoided,
- Any landscape or rehabilitation works should use local native species,
- Any chemicals used on site should be taken off site after use and disposed of appropriately,

- Any native shrubs, logs or bush rock that are removed should be stockpiled on the side of the proposed access route and raked back over the site following completion of the works, and,

- If required, bush regeneration and weed control should be undertaken to ensure the flora and fauna of the local area are protected throughout the construction and operation phases of the proposed development. Bush regeneration works, including weed control and rehabilitation, may be required if the area does not regenerate naturally or if exotic species become established in the area. Bush regeneration techniques such as brush matting and spreading of cleared native biomass over disturbed areas should be used to encourage native regeneration where necessary. Such works should be undertaken by suitably qualified and experienced personnel.

5.6 Traffic

Access to the site will be via a constructed all-weather earthen track that will provide an intersection onto Moreton Park Road.

Construction workforce numbers are predicted to peak at 20 for an eight week period. Construction and commissioning is expected to take four months. It is expected that a maximum of four vehicles will be required to provide transport for this workforce.

The construction equipment will be floated to site on low-loader vehicles. The construction equipment will remain on site until the completion of construction. It is expected that eight low loader movements will be required prior to commencement and at the conclusion of construction. During the construction period approximately 12 vehicles per day will access the site in relation to supervision, maintenance and monitoring activities. At these predicted levels, access from the site onto the Moreton Park Road is not expected to create a significant impact.

Operational access requirements will generally be limited to a once weekly inspection for maintenance and monitoring purposes.

5.7 Waste Management

During construction, waste will be generated on site from the following sources:

- Packaging from materials and supplies,

- Wastewater from temporary office, toilet and bathhouse facilities,

- General office waste, and,

- Vehicle servicing wastes.

Packaging wastes will be separated into metal, wood and other recyclable streams. These separated waste materials will be recycled in an approved manner.

Non-recyclable materials will be collected separately and will be disposed off-site in an approved waste facility.

Wastewater from the temporary office, toilet and bathhouse will be collected on-site prior to transport off-site for disposal at an appropriately authorised disposal facility.

General office waste will be collected and disposed off-site at a licensed waste facility.

Vehicle servicing wastes will consist of oils and greases together with assorted hydrocarbon containers. The oils, greases and containers will be collected for recycling.

5.8 Electromagnetic Field Effects

The National Health and Medical Research Council (NHMRC) has adopted guidelines for the exposure of humans to Electric and Magnetic Fields.

The proposed works will be within the limits set by the guidelines and electromagnetic field effects are not expected as a result of the proposed works.

Integral Energy has an ongoing commitment to a policy of "Prudent Avoidance" endorsed by the Electricity Association of Australia with regards to the location of assets that generate electromagnetic fields. Prudent avoidance is defined as taking reasonable steps to minimise exposure to electric and magnetic fields where this can be done without undue inconvenience or undue exposure.

5.9 Substation Lighting

In order to provide site security and a safe working environment, the Substation will require exterior lighting during operations. Steps will still be taken to minimise the effects of site lighting.

The lighting will be designed and constructed to minimise light spillage from the site and to avoid lights shining directly towards residences.

The nearest residence is approximately 170m distant and, providing appropriate lighting design, is unlikely to be affected by lighting spillage.

5.10 Archaeology, History and Heritage

BHPBilliton Illawarra Coal (BHPBIC) commissioned Biosis Research Pty Ltd to undertake an assessment of the Project's impact on Aboriginal archaeological and historical cultural heritage aspects.

A copy of their report titled "Douglas North 66/11kV Substation and Transmission Line Upgrade: Aboriginal and Historical Cultural Heritage Assessment", dated December 2006 is included in Appendix IV in this Environmental Assessment. The Report details the Study methodology and process as well as reporting findings and recommendations.

This report also assesses the archaeological impacts associated with installation of the power line supplying power to the Douglas North 66/11kV Substation. The construction of this power line is being assessed separately from the construction of the Douglas Park 66/11kV Substation. The power line will be assessed under Part 5 of the Environmental Planning and Assessment Act 1979 and is subject to a Review of Environmental Factors in accordance with that Part.

A process of consultation with Aboriginal stakeholders was initiated in accordance with the Department of Environment and Conservation's Part 6 Approvals – Interim Community Consultation for Applicants. Consultation was undertaken with Tharawal Local Aboriginal Land Council, Cubbitch Barta Native Title Claimants, Wadi Wadi Coomaditchie Aboriginal Corporation and Simms Gundungarra. Tharawal Local Aboriginal Land Council and Cubbitch Barta Native Title Claimants also participated in the field survey.

One Aboriginal site (MPR 1) was known to exist near the Substation site. This site was re-located during the Biosis field survey. Biosis concluded that it is likely that further subsurface archaeological deposits may exist around the location of MPR1.

Biosis recommended the following actions to minimise impacts on MPR 1:

- An archaeological testing programme should be undertaken within the vicinity of MPR 1 to determine the presence, depth and characteristics of any Aboriginal archaeological material. This testing programme should be undertaken prior to construction of the Substation, access track, borehole and underground cabling. This testing would be done in accordance with the provisions of Part 3A of the Environmental Planning and Assessment Act 1979, and,

- A physical barrier providing an appropriate buffer be erected around MRP 1. All people involved with the construction works are to be briefed on their location and significance.

Biosis also recommended that should any unanticipated Aboriginal or historic heritage material be identified during any phase of the proposed works, all work must cease in the vicinity of the find while the appropriate statutory consent authority is contacted.

The Wollondilly Local Environmental Plan 1991 does not identify any heritage items within the study area, nor are there any apparent heritage items affected by the Project. Biosis noted that no further work or permits are required under the NSW Heritage Act 1977.

5.11 Visual

BHPBilliton Illawarra Coal (BHPIC) commissioned Maurice Hayler and Associates, Architects, to undertake an assessment of the Project's visual impact.

A copy of their Report titled "Visual Impact Study Douglas North Substation Project", dated January 2007 is included in Appendix V in this Environmental Assessment. This report also assesses the visual impacts associated with installation of the power line supplying power to the Douglas North 66/11kV Substation. The construction of this power line is being assessed separately from the construction of the Douglas Park 66/11kV Substation. The power line will be assessed under Part 5 of the Environmental Planning and Assessment Act 1979 and is subject to a Review of Environmental Factors in accordance with that Part.

Hayler concludes that given the existing site conditions and by adopting his Report's recommendations, it is not likely that the proposed Douglas North 66/11kV Substation would be noticeable or offensive to a member of the public when viewed from the surrounding public areas.

The Substation is reasonably well located as it is mostly screened by a roadside mound and vegetation along the Hume Highway. The Substation will be visible from a moving vehicle on the Hume Highway in glimpses through the vegetation. There are Wattle trees planted on a 1.5 to 2m high mound along the side of the Highway and, apart from a number of small breaks in the vegetation that allow the Substation to be noticed, this provides a good screen. Hayler concluded that because of the roadside screening the Substation will not be visibly intrusive when viewed from the Highway.

Viewed from Moreton Park Road, the proposed Substation will be noticeable and distinct but will sit relatively unobtrusively in the landscape. The proposed Substation site has an

extensive backdrop of trees to the south and east and a copse of screening trees at the northern boundary close to Moreton Park Road.

The Report includes a number of diagrams that assist in appreciating the visual effects of the Project. The diagrams include artist impressions (Hayler Report Figure 5 and 6), photographs of typical switching station fencing materials (Figure 9), and a photograph of the site and surrounds (Figure 4).

Hayler recommends a number of measures to reduce the visual impact and to blend the Douglas North 66/11kV Substation into the background. These are listed below and will be implemented:

- The perimeter fence should have a charcoal or black finish,
- Roofs of any buildings should be equal to Colorbond Windspray (grey) or Wilderness (grey green),
- Metal wall cladding should also be equal to Colorbond Windspray (grey) or Wilderness (grey green), and,
- Where possible the proposed access road should be aligned to retain mature trees.

6. CONSULTATION

Consultation for this project commenced prior to the preparation of the Environmental Assessment and has continued throughout the preparation of the Environmental Assessment. The following section describes the consultation process and the issues raised for relevant local, state and commonwealth government authorities, service providers, community groups and affected landowners. A summary of specific consultation with Department of Environment and Conservation, Department of Natural Resources, Department of Primary Industries, NSW Roads and Traffic Authority, Integral Energy and Wollondilly Council, as required in the DGRs are included in Table 6.1.

Table 6.1. Consultation Process and Issues

Party	Process	Issue
Department of Environment and Conservation Contacts: Kate Hopkins and Craig Pattison, Operations Officers	Telephone conversation to arrange meeting and confirm they had PA Meeting with IC Manager Environment, IC Manager Approvals and Director of OEC 30.1.07 Reviewed PA and discussed progress with EA	Hawkesbury Nepean River Flora & Fauna Coridor, limit clearing – confirmed clearing for bushfire protection to IE Standard, revegetation along borehole access and minimise clearing for access track to. Avoid, Minimise, Offset Principle. Potential offset planting Provide DEC copy of EA
Department of Natural Resources Contact: D Goldrick Senior Natural Resource Officer	Telephone conversation 31.1.07 e-mail Provided Preliminary Assessment 31.1.07 e-mail Response 2.2.07	No specific comment
Department of Primary Industries Contact: J Egan Manager Regional Operations (Southern)	Meeting with IC Manager Environment, IC Manager Approvals and Director of OEC 29.1.07 Reviewed PA and discussed progress with EA	No issues
NSW Roads and Traffic Authority Contact C Millet Manager Land Use Development Impacts	Telephone conversation 12.2.07 e-mail Provided Preliminary Assessment 12.2.07	No response received at this time
Integral Energy Contact: Ray Skinner Integral Energy Australia (Networks) as the	April 2004	Potential new connection raised with IEA at general meeting between both parties. Project allocated "CAP NIL 0095" by IEA

Network Service Provider (NSP) for the Douglas Park Area	October 2004 March 2006 September 2006 November 2006 February 2007	Formal connection enquiry submitted by BHPB to IEA Formal connection application submitted to IEA by BHPB , detailing proposed scope and timing IEA confirm acceptance of connection application and permission to proceed BHPB/IEA co-ordination meeting to discuss terms of connection, design approval process, environmental management plans IEA formal supply offer and design brief
Wollondilly Shire Council Contact: M Kelly, Supervisor Development Assessment B Stag, Environment Manager	Meeting with IC Engineering Manager, IC Project Manager and IC Manager Approvals. 17.1.07	Gas emission from boreholes – confirmed that boreholes are cased and cemented and do no provide a path from the strata or the workings LALC involved in archaeological study and preparation of management plan Limit clearing Bushfire Protection - confirmed to IE Standard Water supply – Confirmed on-site tank Application to Council for sewerage ‘pump-out ‘during operational phase Entrance gate to be set back from fenceline to minimise disruption to traffic Vegetive screening along front fenceline and common boundary Seek MSB Approval ASAP Provide 2 copies of EA

Telstra Asset Protection Branch	On-site Meeting with IC Project Director and IC Project Manager	Protection of buried Sydney-Melbourne FOC which crosses the property
Mine Subsidence Board Contact D Bullock Picton District Manager	Provided copies of Preliminary Assessment 17.1.07 Telephone conversation 9.2.07 e-mailed confirmation 9.2.07	Provide copy of EA Design Plans to be submitted to MSB for approval prior to construction
Appin Area Community Working Croup	Meeting with IC Manager Environment, IC Manager Approvals 21.11.06 Reviewed PA and discussed progress with EA	Clearing of vegetation More efficient use of electricity Land ownership
Adjacent Landowners	Telephone conversations Meetings Nov. 2006 – Feb. 2007	Electromagnetic Radiation and Health Impact on Property Value

7. PROJECT ENVIRONMENTAL MANAGEMENT

BHPBilliton Illawarra Coal (BHPBIC) will manage the Douglas North 66/11kV Substation Project in accordance with the Integral Energy Environmental Management System (EMS). The Integral EMS is described in a series of documents. The most applicable to the Douglas North 66/11kV Switching Station are as follows:

- Integral Document No. EMS 0001, "Environmental Due Diligence and Environmental Management Plans".
- Integral Document No. EMS 0002, "Pollution Control".
- Integral Document No. EMS 0007, "Waste Management".
- Integral Document No. EMS 0008, "Environment Incidence Response".
- Integral Document No. EMS 0011,"Environmental Guidelines for Level 2 Accredited Service Providers".

Integral Document No EMS 0001 calls for the development and implementation of an Environmental Management Plan for all Integral activities. In addition to their own BHPBIC EMS requirements, the Douglas North 66/11kV Substation EMP will be developed in accordance with the Integrals' requirements as described in the above listed documents.

The EMP will address such issues as:

- Utilities and Services,
- Roads, Traffic and Access,
- Visual Impact,
- Water Quality, Soil Erosion and Sedimentation,
- Noise,
- Flora and Fauna,
- Safety, Hazards and Traffic Management,
- Heritage and Archaeology,
- Waste Handling and Disposal,
- Community Consultation, and,
- Air Quality and Dust Suppression

The EMP will be very similar to those used at BHPBIC operations and will be readily adopted and managed by current arrangements.

BHPBilliton also has certification in accordance with ISO 14001.

The successful works contractor will prepare a Safe Working Method Statement, which will include details of the environmental controls for the worksite. The following details will be included as a minimum:

- All staff will be briefed on the environmental controls prior to work commencing,
- Spoil control and the erection of silt and erosion fences,
- Noise and local environmental constraints,
- All waste will be collected and deposited in designated areas,
- Spill kits will be maintained on site at all times,
- Plant will receive an inspection prior to commencing work on site in order to determine safety and fit for purpose status, and,
- Plant will also be inspected daily.

8. STATEMENT OF COMMITMENTS

This section lists all the commitments in this Environmental Assessment that BHPBilliton Illawarra Coal (BHPBIC) has made and will undertake to minimise impacts on the environment if the Project is approved.

- BHPBIC will continue to operate its office in the Appin Business and Shopping Precinct.
- BHPBIC will continue to operate the 24-hour contact telephone line.
- BHPBIC will continue to support the operation of the Appin Area Community Working Group and associated community liaison activities.
- BHPBIC will ensure that during construction, a water cart will be used to minimise the generation of dust.
- BHPBIC will ensure that all sedimentation structures will be designed and built in accordance with the Landcom publication, "Soils and Construction" Volume 1, Fourth Edition, dated March 2004 and the associated hip pocket handbook.
- Prior to major site earthworks commencing, BHPBIC will ensure that a sedimentation fence is constructed immediately downstream of the disturbed construction site.
- BHPBIC will ensure that prior to construction commencing the successful Contractor will prepare a Site Environmental Management Plan consistent with BHPBIC existing EMS.
- Topsoil will be retained for future revegetation. Topsoil stockpiles will be protected by sedimentation fences installed in accordance with the Landcom publication, "Soils and Construction".
- BHPBIC will ensure that all equipment is well maintained. If the noise level of an item of equipment is suspected of being out of specification as defined in Table 6.1 of the Day Design Report (Appendix I), the contractor will ensure that the noise level of the equipment is measured and any necessary maintenance action taken.
- BHPBIC will ensure that nearby residents are informed of the start of construction activity. The residents will be provided with the contact details of the Contractor's Site Manager. If any noise complaints are received, the Site Manager will implement procedures immediately to investigate and respond to the complaint.
- Wherever possible, the access track will be located and constructed to avoid the need to remove trees. Wherever possible, trees with hollows will be retained.
- Weed control procedures will be developed by the successful Contractor, and approved by BHPBIC prior to the commencement of construction.
- BHPBIC will ensure that a suitably qualified and experienced person will undertake and supervise all weed control and rehabilitation activities.
- Landscaping and revegetation activities will use native species where appropriate.

- BHPIC will plant an area of 0.6ha with the main tree species of the Shale Sandstone Transition Forest and Western Sandstone Gully Forest in existing cleared areas on the property. These plantings will be fenced to exclude grazing.

- BHPBIC will ensure that Project design ensures site light spillage is minimised and lights do not shine directly towards residences.

- BHPBIC will undertake an archaeological testing programme to determine the nature of any subsurface archaeological material that may be present.

- BHPBIC will ensure that a barrier providing appropriate buffer will be erected around archaeological site MRP1. All people involved with construction works will be briefed on their location and significance.

- All work will cease in an area if Aboriginal archaeological material is uncovered during construction. The Department of Environment and Conservation and the Consulting Archaeologist will be advised should such an event occur. Work will recommence following consultation with the Department of Environment and Conservation and their direction.

- BHPBIC will ensure that the design of the Project directs that the colours used on the visible construction materials are the same as or equivalent to those recommended by Maurice Hayler and Associates in their Report (Appendix V).

- BHPBIC will ensure that the Project is managed and operated in accordance with the Integral Environmental Management System and that of their own Environmental Policy and Environmental Management System.

- BHPBIC will ensure that the successful Contractor will prepare a Safe Working Method Statement including details of environmental controls for the site.

9. DIRECTOR GENERAL'S REQUIREMENTS

The Director General's Requirements (DGRs) are included in full in Appendix VI. This section summarises the DGRs and details which sections of the Environmental Assessment address the DGRs.

Table 8.1. Director General's Requirements and Environmental Assessment Section Reference

DGR Issue	Comments and Reference in Environmental Assessment
Liaise with Commonwealth Government if proposal has a significant impact on Matters of National Environmental Significance.	No significant impacts predicted. Section 5.5 and Appendix III.
The Environmental Assessment must include an Executive Summary	Included immediately after the Environmental Assessment Index.
The Environmental Assessment must include a detailed description of the project.	Refer Section 2.1.
The Environmental Assessment must consider relevant statutory provisions.	Refer Sections 3 and 4.
The Environmental Assessment must include a general overview of the environmental impacts of the Project, identifying the key issues for further assessment and taking into consideration the issues raised during consultation.	Refer Section 5 and Specialist Reports in Appendices I to V.
The Environmental Assessment must include a detailed assessment of the key issues specified as, Surface Water, Noise, Traffic, Flora and Fauna, Heritage and Visual.	Refer to: Section 5.2 for Surface Water, Section 5.4 and Appendices I and II for Noise, Section 5.6 for Traffic, Section 5.5 and Appendix III for Flora and Fauna, Section 5.10 and Appendix IV for Heritage, and Section5.11 and Appendix V for Visual.
The Environmental Assessment must include a description of the measures that would be implemented to avoid, minimise, mitigate, offset, manage and/or monitor the impacts of the project.	Refer Sections 5, 6 and 7.
The Environmental Assessment must include a Draft Statement of Commitments outlining environmental management, mitigation and monitoring measures.	Refer Section 7.
The Environmental Assessment must include a conclusion justifying the project, taking into consideration the environmental impacts of the proposal, the suitability of the site, and the benefits of the project.	Refer Executive Summary and Conclusion. Last paragraph.

The Environmental Assessment must include a signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading.	Information Statement included in the front of the Environmental Assessment.
The Environmental Assessment must take into account relevant State Government technical and policy guidelines.	Refer various Specialist Consultant reports in Appendices I to V.
During the preparation of the Environmental Assessment, the Proponent must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups or affected landowners. The consultation process and the issues raised must be described in the Environmental Assessment. In particular, the Proponent must consult with, Department of Environment and Conservation, Department of Natural Resources, Department of Primary Industries, NSW Roads and Traffic Authority, Integral Energy and Wollondilly Council. The consultation process and the issues raised must be described in the Environmental Assessment.	Specifically referenced in Section 6. Also refer Sections 3 and 4. Also submissions from various Government Authorities attached to the DGRs in Appendix VI.

289000

290000

6215000

6215000

Douglas Park Air Station (IEA)

bhpbilliton

Carbon Steel Materials

Illawarra Coal Holdings Pty Ltd
Asset Development

Legend

Proposed Substation

ACCESS_ROADS

BOREHOLES

BUILDING

B_HOLE_ENVELOPE

CABLE_CORRIDOR

COMPOUND

Fire_Zone

Existing 33kV Poles

Existing 33kV Conductor

Existing 33kV Easement

Potential Borehole Locations

Property Boundaries

Existing Integral 66kV Network

No.1 Seam Operations

Douglas North Services Site

Project General Layout

Date: 2nd Feb, 2007
Author: P.Booth
Signed Off:

Scale 1:5,000
Horizontal Datum
MGA - Zone 56

Fig 7.2
Version 5

N
W
E
S

0 50 100 200 300 400 500 Metres

289000

290000

290300 290400 290500 290600

6215400 6215300

Lot 1 DP 250231
Lot SOUTH WESTERN FWY DP
Lot 4 DP 250231
Lot 11 DP 250231
Lot HARRIS RD DP
Lot 2 DP 583328
Lot 10 DP 250231
Lot 1 DP 583328
Lot 21 DP 656919
Lot NEPEAN R DP

Hole 3 (Future Gas/Comms)
Hole 1 (Power)
Hole 2 (Future Power)

bhpbilliton
Carbon Steel Materials
Illawarra Coal Holdings Pty Ltd
Asset Development

Legend

Layer
ACCESS_ROADS
BOREHOLES
BUILDING
B_HOLE_ENVELOPE
CABLE_CORRIDOR
COMPOUND
Fire_Zone
Existing 33kV Poles
Existing 33kV Conductor
Existing 33kV Easement
Potential Borehole Locations
Property Boundaries

No.1 Seam Operations
Douglas North Services Site
66kV/11kV Power Layout

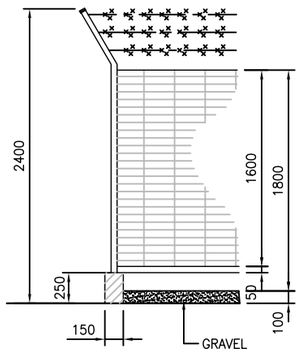
Date: 2nd Feb, 2007
Author: P.Booth
Signed Off:

Scale 1:1,000
Horizontal Datum
MGA - Zone 56

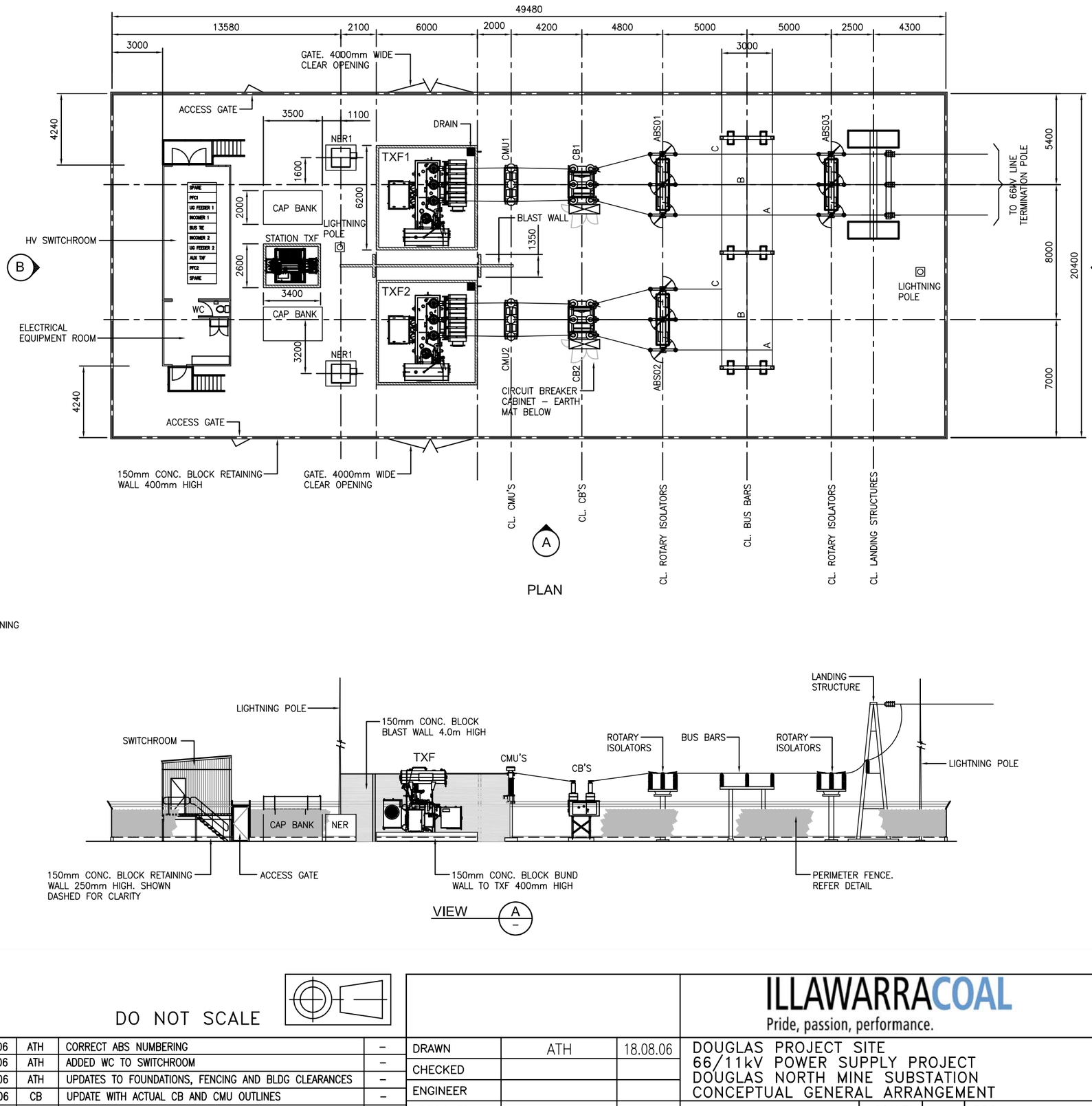
Fig 7.3
Version 5

N W E S

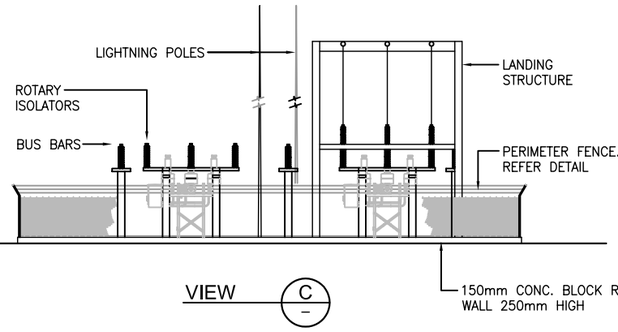
0 50 100 200 Metres



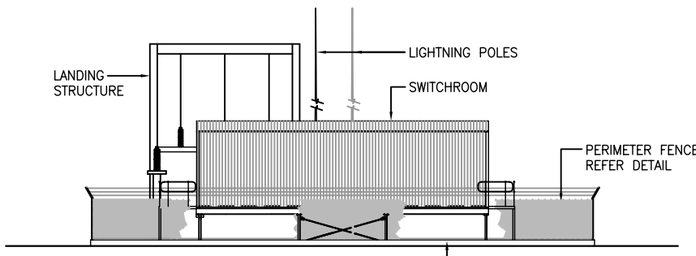
PERIMETER FENCE DETAIL
SCALE 1:50



PLAN



VIEW C



VIEW B

VIEW A

DO NOT SCALE

FILE NAME: K0512-002-E1

REF. DRGS.	DRG. No.	TITLE

REVISIONS	REV.	DATE	BY	DESCRIPTION	CHK.
	E	07.11.06	ATH	CORRECT ABS NUMBERING	–
	D2	19.10.06	ATH	ADDED WC TO SWITCHROOM	–
	C	20.09.06	ATH	UPDATES TO FOUNDATIONS, FENCING AND BLDG CLEARANCES	–
	B	07.09.06	CB	UPDATE WITH ACTUAL CB AND CMU OUTLINES	–
	A	18.08.06	ATH	INITIAL DRAFT	–

DRAWN	ATH	18.08.06
CHECKED		
ENGINEER		
APPROVED		
APPR. BHPB		

ILLAWARRACOAL
Pride, passion, performance.

DOUGLAS PROJECT SITE
66/11kV POWER SUPPLY PROJECT
DOUGLAS NORTH MINE SUBSTATION
CONCEPTUAL GENERAL ARRANGEMENT

VENDOR DRG. No.	SCALE		DRG.	REV.
K0512-002	1:250	A3		E1

BORDER SCALE 0 50mm 100mm

APPENDIX I

“Construction Noise Impact. Douglas North Substation at Douglas North NSW”.

Day Design 11 December 2006

APPENDIX II

“Environmental Noise Impact. Douglas North Substation at Douglas Park NSW”.

Day Design. 6 February 2007

APPENDIX III

“Flora and Fauna Assessment: Douglas North Substation”

Bisosis Research Pty Ltd. February 2007

APPENDIX IV

"Douglas North 66/11kV Substation and Transmission Line Upgrade: Aboriginal and Historical Cultural Heritage Assessment"

Biosis Research Pty Ltd. Dated December 2006

APPENDIX V

“Visual Impact Study Douglas North Substation”

Maurice Hayler and Associates. Dated 6 February 2007

APPENDIX VI

Director General’s Requirements

APPENDIX VII

“Cultural Heritage Management Plan. Douglas North Substation”

Biosis Research Pty Limited