

30 August 2006

ABN 31 357 688 069
Suite 1603 Level 16
227 Elizabeth Street
Sydney NSW 2000

PO Box A2238
Sydney South NSW 1235

Telephone: +61 2 8268 4200

Facsimile: +61 2 9261 2967

Eraring Power Station
Rocky Point Road
Eraring NSW 2264

PO Box 5044
Dora Creek NSW 2264

Telephone: +61 2 4973 0700

Facsimile: +61 2 4973 0710

Mr Ricardo Prieto-Curiel
Senior Environmental Planner
NSW Department of Planning
GPO Box 39
Sydney NSW 2001

Dear Ricardo

RE: PROPOSED UPGRADE TO ERARING POWER STATION – RESPONSE TO SUBMISSIONS

I refer to your fax dated 24 August 2006 and your subsequent email of 25 August 2006 with respect to additional information required for the assessment of the proposed installation of an Emergency Gas Turbine Generator (EGTG) and expansion of the existing ash dam at Eraring Power Station.

Eraring Energy's response to new issues raised in submissions is provided in Table 1 attached to this letter. With regard to the specific issues raised in your correspondence, please see Eraring Energy's response below.

- 1** *Justification for the proposed ash disposal dam expansion and clearing of 52 ha. Further identification and review of options (eg. Disposal in abandoned underground mines in the area, disposal in abandoned mine voids, disposal on existing dam footprint including rehabilitation areas, etc), assessment of options (eg. Visual/other assessment of disposing at existing footprint, assessment of underground (old mine) disposal etc.*

Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Of the options available to EE for ash disposal, the option presented in the EA will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option. A consideration of alternatives is provided below.

Do Nothing

At the current rate of disposal, Eraring's existing ash disposal facility will be full by the year 2011/2012. EPS has an expected life beyond 2030, therefore if no action is taken, there will be insufficient capacity to dispose of the ash on-site during the power station's operational life. This option was considered to be unacceptable due to the practical implications for the continued operation of the plant.

New Dam on the other side of the ridge

The construction of a new dam on the other side of the ridgeline site using the same 'lean phase' disposal method was considered as an option for accommodating the ash disposal needs of the plant into the future.

This option would involve the use of a substantial area of previously undeveloped land on the site and would utilise a relatively inefficient disposal method which requires a larger footprint and provides lesser capacity.

This option was discounted due to the inefficiencies in both the use of land and the method of disposal.

Continuation of 'lean phase disposal'

The continued use of lean phase disposal on the site would require more land and would be a less sustainable and efficient form of ash disposal. This option was discounted due to these inefficiencies.

Reuse of Ash

Currently, of the ash material produced at EPS, approximately 45% of fly ash is sold through an agreement with Fly Ash Australia for use in other production processes, such as concrete manufacturing. All bottom ash, and a proportion of reclaimed bottom ash is sold through an agreement with Blue Circle Ash to be reused as a gravel substitute for use in landscaping and roads.

In 2003 around 52%, or over 600,000 tonnes, of the ash produced at the EPS was recycled. Fly Ash Australia has indicated that re-use should increase by about 2% per annum.

EE is continuing to seek markets for the sale of ash to increase the reuse of ash produced at EPS. EE put to the market an Expression of Interest (EOI) for the fly ash not being used by Fly Ash Australia in late 2005. Only one response was received to this EOI for the use of the ash in the production of artificial aggregates. This option requires further development and discussions are continuing in this regard.

In addition, Blue Circle Ash has indicated that fly ash may have a possible use in bricks. A trial of this use was carried out in October 2005 and is currently being evaluated.

EE will continue to seek options for the reuse of ash, however, in the meantime it is prudent to assume an appropriate storage/disposal facility is still required on the site. Therefore this option will continue to be used in conjunction with an ash disposal facility.

Commitment 26 of the Statement of Commitments for the project states that EE shall continue to investigate and pursue opportunities for the reuse of ash. A report detailing the steps undertaken by EE to increase the reuse of ash shall be submitted to the Director-General and the DEC every two years from the date of project approval (or at such other interval agreed by the Director-General).

Disposal to Abandoned Mine Voids

EE submits that previous reviews of the option to dispose of fly ash in local mine workings both underground and open cut indicated that the underground mining technique used and the angle of repose of the fly ash greatly inhibits the mine working to be an effective disposal site. The use of dense phase placement into local coal mines was considered in a trial by ACARP (Australian Coal Association Research Program) during 1998 and 2001. This trial revealed significant issues surrounding the potential for groundwater contamination which would need to be resolved before this could be considered to be a viable option.

Further, as the dense phase material flows to the lowest point, placing ash in operational mine sites is not possible as the lowest points are where the activity is continuing. Only sites declared as finished or abandoned would be suitable and there are no local open cut mines which would allow disposal at this time.

Disposal on Existing Dam Footprint including Rehabilitation Areas

Consideration was given to the use of dense phase disposal utilising the full existing dam footprint including the area previously capped and rehabilitated. Whilst this option would have reduced the area required to be cleared, it was found to have issues related to run off during storm events and air quality impacts associated with dust which outweighed the potential impacts of the preferred option.

EE has established a Selenium Reduction Program which is aimed at reducing inflows to the ash dam which minimises the potential for discharging ash dam decant water (including selenium) into the environment. Adherence to this program now forms a requirement of EE's current EPL. The main focus of this program is to divert clean water run-off from the catchment around the ash storage area. Over 120 hectares (30%) of the catchment has now been diverted which is a major factor in reducing the need to discharge to Lake Macquarie. The capped and rehabilitated areas to the east of the ash dam represent 75 hectares of catchment diversions. Therefore, if these areas were used for the ash dam expansion, the whole dam catchment area diversion would be reduced by more than 50%. This decrease in diversion would mean that the total run-off into the dam would increase and potential for discharge to Lake Macquarie would be greater. Using these areas would also increase the total bare ash area exposed, thus increasing the volume of run-off available to leach selenium from the ash deposit.

In addition, static and stability issues would limit the height to which ash deposit could be built up on the capped area. If the ash deposit is raised too high or the containment embankment is located too close to the existing dam wall, this could lead to instability in the ash deposits and the main embankment. Consequently, the additional ash storage gained by utilising the capped areas would be limited and it is unlikely that the area would be large enough to hold all the ash produced.

A further issue associated with the use of these rehabilitated areas is the potential for unplanned discharge via the spillway during extreme storm events. As the ash level rises, it will be necessary to raise the pond operating level to maintain the decant pond which would in turn lead to an increased potential for spillway flood flows.

Finally, the use of these areas would result in greater potential for dust problems due to a greater area of exposed ash surface.

Expansion of Existing Dam using 'Dense Phase' Disposal and Land to North

The use of 'dense phase' disposal would facilitate the expansion of the existing dam, rather than the construction of a new dam due to the higher density of the material being disposed.

Due to the higher concentration of this material, the disposal method is more efficient and enables the expansion of the existing dam using the adjacent ridgeline as a wall. This was the selected option for the project due to the added efficiency, minimal construction and land required, and subsequent reduction in environmental impact.

Using half the dam area and expanding onto the land directly to the north of the existing dam was considered to have fewer environmental issues and much lower operating costs and was the recommended option in the CWPPi feasibility study.

2 Justification of the EGTG in the context of the currently approved Delta Electricity's Munmorah Gas Turbine facility which provides black start/emergency capability etc.

The EGTG is designed as a black start facility. TransGrid require a minimum of 2 major units (1320MW capacity) in the Northern region to be restarted as soon as possible in the event of a system failure. The Delta facility will only be 600MW. Therefore, an additional unit would be required to be restarted to meet the requirements of TransGrid. The EGTG is embedded within the EPS switchboard network and can be operated to secure up to 2 main unit auxiliaries prior to a system shutdown. This will result in a much faster unit restart time at EPS. The Delta facility will not be operational until 2009 but the EGTG will be available in 2007 when supply shortages are indicated. As a consequence, the EGTG is still required for black start capability.

3 Estimation of volume of ash requiring disposal over the life of the EPS based on current and projected reuse rates. Clarification of proposed staging of clearing area to be cleared in year 1 (2012?), year 2..etc..to year 20.

The current ash dam facility will be full by 2011/12. However, for the power station to remain operational, the new dense phase system will be required to be in service before that time. The clearing stages for the dense phase system are to commence in 2009/10 (year 1) when the first unit will be connected to the dense phase system. EPS produces approximately 1.35 million tonnes of fly ash per year of which 45% is recycled. This equates to approximately 700,000 tonnes of fly ash per annum that is required to be placed in the ash dam. The first year of operation of the dense phase system will fill voids (humps and hollows) in the existing ash area. It is then expected that the ash will typically increase in height approximately 5 metres every 5 years. At year 10 (or 2020) the ash level will be at approximately the existing EE boundary. The next 10 years (2030) will require a further increase in height of 5 metres to allow the ash to be placed. Refer to attached sketch showing predicted ash storage.

4 Ecological impacts of proposed expanded ash disposal facility. In that regard, refer to Section C of Council's submission.

Lake Macquarie City Council raised three main issues of concern in relation to the potential ecological impacts of the proposal in its correspondence of 18 January 2006. These three issues are addressed below.

a) EP&BC Act listed matters of national environmental significance affected by the proposal and further details of EP&BC Act issues should be included in the assessment.

Relevant matters under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) are addressed in Section 4.5 of the EA and in more detail in Section 5.2.3 of the Flora and Fauna Assessment (HLA 2005).

A referral under the EPBC Act is required when a person proposes to undertake an action which they believe may need approval under the EPBC Act, i.e. actions that may have a significant impact upon matters of National Environmental Significance (NES).

The EPBC Act lists seven matters of NES which must be addressed when assessing the impacts of a proposal. These are assessed in Section 4.5.2 of the EA and it is concluded that the proposal is not likely to have a significant impact upon any of these matters.

Of most relevance to the assessment are Commonwealth-listed threatened species and Commonwealth-listed migratory species which are addressed in more detail below:

- Runoff from the proposed project will be contained within the existing ash dam bund with discharge flowing into Lake Macquarie. Therefore the Hunter Estuary Wetlands will not be impacted by the proposal.
- With the exception of the Grey-headed Flying-fox, no species of fauna listed under the EPBC Act were observed within the study area.
- The impact upon the Spotted-tailed Quoll and the Regent Honey-eater is not expected to be significant as a large area of similar habitat is found directly to the north of the study area.

- The Swift Parrot is unlikely to be affected by the proposed project as the species is unlikely to be present in the local area during the peak flowering period of the present vegetation community.
- The impact upon the Long-nosed Potoroo is not expected to be significant due to a large area of similar habitat directly to the north of the study area.
- It is considered unlikely that there will be a significant impact upon species listed under the EPBC Act which are reliant upon aquatic habitats as there are no creeks or suitably permanent pools within the study area.
- There is no reed bed habitat that would support a population of Painted Snipe.
- Habitat for species requiring rocky areas is absent.
- The viability of the local population of *Tetratheca juncea* is not expected to be significantly affected as the adjacent areas are unlikely to be impacted provided that a buffer is established along the ridgeline and weeds are controlled on the ash deposit.
- It is unlikely that any migratory species listed under the EPBC Act will be significantly impacted by the proposed project as no evidence of nesting was observed and it is likely that the majority of the species foraging would take place over Lake Macquarie.

Based upon the above, it is considered that the proposal will not have a significant impact upon matters of NES and a referral under the EPBC Act is therefore not required.

Council's assertion that approval of the Commonwealth Minister for the Environment and Heritage is required if a proposal has the potential to impact on certain threatened species listed within the EPBC Act is incorrect with such approval only being required where the impact itself is assessed as being significant.

- b) *Flora and fauna surveys should be undertaken having regard to the Lake Macquarie Flora and Fauna Survey Guidelines (July 2001) and the Lake Macquarie Tetratheca juncea Management Plan (as amended 2001). The environmental assessment should note this, and identify whether there is any inconsistency between the surveys undertaken and these guidelines.***

Lake Macquarie City Council (LMCC) was invited to attend the Planning Focus Meeting for this project which was held on 30 September 2005 but did not attend. A copy of the EASR was subsequently forwarded to LMCC with a request for requirements to be included in the Environmental Assessment Requirements (EARs) to be issued by the Director General. It is understood no requirements were provided to the DoP and EARs were issued on 19 December 2005. HLA subsequently undertook the flora and fauna survey in accordance with the EARs which state:

The Environmental Assessment must include an assessment of ecological impact as a result of the proposed development including a description of the type of vegetation in the immediate and surrounding area, an outline of the level of vegetation to be cleared, measures to minimise any impacts such as level of clearing required and any rehabilitation proposed. The ecological assessment must also assess the potential impacts of the proposal on both terrestrial and aquatic critical habitats; threatened species, populations or ecological communities, or their habitats in accordance with section 5A of the Environmental Planning and Assessment Act 1979.

The flora and fauna assessment was also undertaken in accordance with National Parks and Wildlife Service (NPWS) requirements and the Department of Environment and Conservation (DEC) has raised no objection to the methodology used for the study. Further, the results of the flora and fauna survey are supported by previous studies undertaken at the EPS site.

HLA independently contacted LMCC on 22 December 2005 during the preparation of the EA seeking requirements for the EA. LMCC eventually advised its requirements by letter dated 18 January 2006. At that stage, the flora and fauna surveys had been completed in accordance with the EARs and, in the absence of advice to the contrary, in accordance with the recognised survey methodologies of NPWS.

It is noted that Council has focussed on its review of the ecological assessment presented in the EA on its consistency with the survey methodology put forward by Council rather than whether or not the different methodology suggested by Council would have yielded a different conclusion. Council's review has not concluded that the assessment undertaken by HLA is incorrect but rather that there could be a significant impact on some threatened species such as *Tetratheca juncea* and that compensatory measures are required. This is the same conclusion reached in the EA.

This conclusion also appears to be consistent with the reviews undertaken by DEC and DoP, neither of which has raised issues of deficiencies in the flora and fauna survey methodology.

c) *The regional biodiversity context and habitat connectivity (corridor) implications of the proposed development should be adequately evaluated and documented in the EA.*

The flora and fauna assessment undertaken in respect of the proposal concludes that there will be no significant impact upon threatened species, populations or ecological communities provided that appropriate safeguards are implemented on the site.

EE has reviewed the proposed mitigation measures in the light of the comments received during the exhibition period and has prepared a supplementary report (submitted to the DoP previously) detailing additional mitigation measures to be incorporated into the project including the provision of compensatory habitat in order to minimise the impacts of the proposal.

Additionally, EE is working with local indigenous groups, community groups, Council and land management experts to develop the reclaimed area of the ash dam into a habitat similar to the habitat that exists in the area to be disturbed. This work along with the development of the corridor (described in the supplementary report previously submitted) between the area to be disturbed and the reclaimed area of the ash dam should encourage the fauna to use the newly developed areas.

The area to be disturbed is approximately 52 hectares in total but this will be cleared gradually over a number of years and only as required. As discussed in the EA it is proposed to clear only a portion of this total area during the first year and a similar area during the first five years. This cleared area is expected to total approximately 10 hectares. Due to the gradual nature of the clearing and EE's commitment to the further development of reuse and recycling options, it is possible that the maximum extent of clearing may be scaled back should a viable alternative become available.

EE is proposing to develop a compensatory habitat of approximately 30 hectares (3:1) including the habitat corridor, continued development of the wetland at the north eastern edge of the ash dam and rehabilitation of part of the reclaimed area of the ash dam (known as area C, the last area to be capped). This work will use similar techniques outlined in the supplementary report previously submitted.

5 *Consistency of proposal with objectives of Zone 9 (refer to Council's submission).*

Pages 4-2 to 4-3 of the EA address the objectives of the Natural Resources 9 zone. The objectives of the Natural Resources 9 zone are addressed below.

- a) *provide land that has dual values as an economic natural resource and for environmental protection, and*

This objective relates to the provision of land with dual values and is not relevant to the proposal.

- b) recognise the dual values of the land and integrate economic use of the land with ecological sustainability, and*

In recognition of the environmental value of the land within the Natural Resources 9 zone which will be affected by the proposal, EE has undertaken a flora and fauna assessment to determine the nature and extent of potential impacts on this area of land and to identify appropriate mitigation and management measures to ensure ecological sustainability.

The flora and fauna assessment undertaken concludes that there will be no significant impact upon threatened species, populations or ecological communities provided that appropriate safeguards are implemented on the site.

Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Of the options available to EE for ash disposal, the option presented will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option.

EE has reviewed the proposed mitigation measures in the light of the comments received during the exhibition period and has prepared a supplementary report detailing additional mitigation measures to be incorporated into the project including the provision of compensatory habitat. This report is attached under separate cover.

- (c) acknowledge the economic value of its natural resources, particularly for extraction of coal, gravel and timber, and*

This objective relates to the extraction of natural resources and is not relevant to the proposal.

- d) acknowledge the long term value of the land for the management and maintenance of biodiversity, threatened species habitat, and corridors by minimising the adverse impacts of resource development, and*

The flora and fauna assessment undertaken in respect of the proposal concludes that there will be no significant impact upon threatened species, populations or ecological communities provided that appropriate safeguards are implemented on the site.

Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Of the options available to EE for ash disposal, the option presented will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option.

EE has reviewed the proposed mitigation measures in the light of the comments received during the exhibition period and has prepared a supplementary report detailing additional mitigation measures to be incorporated into the project including the provision of compensatory habitat in order to minimise the impacts of the proposal. This report is attached under separate cover.

Additionally, EE is working with local indigenous groups, community groups, council and land management experts to develop the reclaimed area of the ash dam into a habitat similar to the habitat that exists in the area to be disturbed. This work along with the development of the corridor (described in the supplementary report previously submitted) between the area to be disturbed and the reclaimed area of the ash dam should encourage the fauna to use the newly developed areas.

The area to be disturbed is approximately 52 hectares in total but this will be cleared gradually over a number of years. As discussed in the EA it is proposed to clear only a portion of this total area during the first year and a similar area during the first five years. This cleared area is expected to total approximately 10 hectares. EE is proposing to develop a compensatory habitat of approximately 30 hectares (3:1) including the habitat corridor, continued development of the wetland at the north eastern edge of the ash dam and rehabilitation of part of the reclaimed area of the ash dam (known as area C, the last area to be capped). This work will use similar techniques outlined in the supplementary report previously submitted.

Further rehabilitation work will be carried out on other reclaimed areas of the ash dam over the following years to develop additional areas of compensatory habitat as clearing of land for the ash dam is required. This is part of the long term management plan for the ash dam area.

(e) rehabilitate disturbed land to a natural state, reflective of its long term value, and

It is intended that rehabilitation of the site be undertaken in stages, corresponding to the staged clearing which is proposed as part of the ash dam expansion.

As rehabilitation techniques and methods will change and develop into the future, it is proposed that a detailed rehabilitation plan be submitted to the Director-General prior to the commencement of works for the ash dam expansion. In this way, EE and the DEC can be assured that rehabilitation of the site is undertaken in accordance with current best practice.

Commitment 9 of the Statement of Commitments for the proposal requires EE to prepare and implement a rehabilitation plan for the site which will provide further detail in accordance with the DEC's comments.

EE has prepared further details on proposed rehabilitation of the site based upon current best practice. Details are provided in the supplementary report submitted to the DoP previously under separate cover.

(f) minimise earthworks while enabling productive use of the land, and

The proposal will require minimal earthworks.

(g) permit habitat disturbance to facilitate forestry, surface activities for underground mining and other extraction of mineral and gravel resources and energy generation works, and

The proposal is for the purpose of energy generation works, therefore the managed clearing required for the proposal is in accordance with this objective.

(h) acknowledge the multiple use of State forests for tourism, conservation and sustainable harvesting of timber, and

This objective is not relevant to the proposal.

(i) provide for sustainable water cycle management.

The selected option for the expansion of the ash dam has been chosen, in part, due to the reduced impacts upon the hydrological regime in comparison with other options considered. EE's objective is to divert clean water run-off from the catchment around the ash storage area to minimise run off into Lake Macquarie.

EE also has a Management Plan in place for water run-off that segregates stormwater and contaminated water and this will continue under the new ash dam proposal. Further, the use of dense phase disposal as part of the proposed ash dam expansion project will utilise less water than the existing lean phase disposal method thus promoting more sustainable use of water.

Detailed hydrological studies will also be undertaken prior to the commencement of works on the ash dam which may result in improvements in water quality in the local area. These studies will augment the preliminary groundwater studies carried out to date which have shown that there is no migration to Myuna Bay from these sources.

6 Decommissioning of the EGTG (refer to Council's submission) and long term land use of the ash dam facilities.

EE will decommission both the EGTG and the ash dam facility following the decommissioning of the EPS site. The future land use of the ash dam area following decommissioning is currently unknown, however it is anticipated that the land would be used for light industrial/commercial in keeping with the permissible uses under the current zoning.

7 Indicate the lots/DPs that apply to the EGTG and the lots/DPs that apply to the ash disposal facility.

Both the EGTG and most of the proposed ash dam expansion are located on Lot 11 DP 1050120. The remaining land for the ash dam expansion comprises Crown Land which adjoins the northern boundary of Lot 11 DP 1050120 up to the ridge line.

8 Clarification of ash disposal volumes/figures:

a) Current remaining ash disposal volume at the existing dam;

The ash dam is surveyed every two years and was most recently surveyed in June 2006. The life estimate for the ash dam has not changed significantly with this survey. The ash dam is expected to reach it's capacity in 2011/12.

b) Annual volumes of ash (dense phase) requiring disposal after 2012 (based on current reuse rates);

The quantity of ash to be disposed of in the ash dam is the same whether the dense phase or lean phase methods of disposal is utilised. The difference is that in the dense phase model, more fly ash is placed per cubic metre than in the lean phase system. So there is still the requirement to dispose of approximately 700,000 tonnes of fly ash per annum at current recycling rates.

c) Difference in volume occupied by lean and dense methods for the same weight of ash.

The lean phase process has a density of approximately 1 tonne per cubic metre as compared to the dense phase density approaching 1.4 tonnes per cubic metre. Hence it is possible to place 40% more ash on the same footprint using dense phase disposal techniques.

9 Justification of the linkages of the two proposals (EGTG and expansion of ash dam).

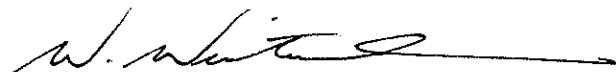
The installation of the EGTG and the expansion of the ash dam form part of an overall upgrade of the facilities at EPS, both required to allow the power station to continue providing reliable electricity to the grid into the future.

The two components of the EPS upgrade are presented together in order to simplify the assessment and approval process for all parties (EE, government agencies and the community). Due to the detail of the ash dam expansion component, a Concept Plan approval enables the key issue of ecological effects to be considered upfront and in an integrated, holistic manner rather than a piecemeal approach of separate applications. The Concept Plan approval does not allow site work to commence on the ash dam expansion until a Project approval is obtained.

The EGTG and dense phase plant will be positioned on EE land either within or near the current power station core site. The dense phase plant will collect fly ash from the operating units and then store dry ash in silos nearby. The dense phase pumping system will sit below these storage silos. The dense phase fly ash slurry will then be discharged at the ash dam site. The major works are not at the dam but rather at the power station site which is in the same vicinity to the proposed EGTG site. As both projects are required for the upgrade of the EPS core site and all or most of the work is in a similar position on the EPS site physically, it was of the opinion of both the DoP and EE that the two parts of the project should be combined for efficiency reasons by simplifying the assessment process.

I trust that the above information, combined with the response to new issues raised in submissions attached in Table 1 satisfies the Department's outstanding matters with regard to the proposal. However, should you require any further information, please do not hesitate to contact Mr Garry Craig on 4973 0521.

Yours faithfully



WAYNE WINTERBINE
ACTING GENERAL MANAGER PRODUCTION

Submission/Agency	Specific Comments	Applicant Response
<p>Department of Environment and Conservation (DEC)</p>	<p>The DEC has no objection to replacing conditions 12 and 13 of their original submission with the following:</p> <p>12. <i>The emergency gas turbine may operate using distillate fuel for not more than 100 hours per calendar year for:</i></p> <ul style="list-style-type: none"> <i>(i) black start;</i> <i>(ii) routine testing and maintenance;</i> <i>(iii) a system shortfall.</i> <p><i>For the purpose of this condition a system emergency shortfall being defined as an NEM dispatch price up to two hours pre-dispatch price of \$300/MWh or more, or such other definition as may be defined in an environment protection licence.</i></p> <p>13. <i>On each occurrence of operation of the emergency gas turbine in response to a system emergency shortfall Eraring Energy must provide the DEC with a comprehensive report explaining the reasons for the operation of the gas turbine on that occasion.</i></p>	<p>EE accepts the changes to conditions 12 and 13.</p>
	<p>The DEC does not support the changes proposed by EE to condition 22 in relation to the timeframe for development of reuse/recycle options for fly ash at EPS. The DEC would however, support an amendment to the condition of the proponent was to present a detailed action plan describing how the reuse/recycle rates and timeframes described in the submission will be achieved.</p> <p>With regard to EE's proposal for offset habitat areas, the DEC has reservations about the utility of the corridor proposal. The value of</p>	<p>EE will endeavour to prepare an action plan as requested and will submit to the DEC for review and endorsement.</p>
		<p>EE agrees to prepare a comprehensive rehabilitation plan and timetable and will amend Commitment 9 to reflect this. An appropriate timeframe for submission of these documents will be agreed with the DoP and the DEC.</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>the corridor as a functional habitat corridor for a range of species is questioned. This issue must be addressed through the preparation of a comprehensive rehabilitation plan and timetable for the entire ash dam area. Commitment 9 must provide for rehabilitation for the entire ash dam area as a compensatory habitat areas and within a reasonable timeframe.</p>	
Lake Macquarie City Council (LMCC)	<p>The issues raised in LMCC's submission are addressed in accordance with the DoP's request in the attached letter.</p>	<p>It should be noted that LMCC was invited to attend the Planning Focus Meeting (PFM) held in respect of the proposal, as well as other forums where the proposal was discussed and in all cases did not attend. Further LMCC did not submit comments during the first or second exhibition period of the EA, with comments only received by the DoP on the 24 August 2006 (exhibition closed on 20 August 2006). Nevertheless, the key issues raised in LMCC's submission are addressed in the attached letter, the previous response to submissions and information provided in the EA itself.</p>
No. 32	No new issues raised.	
No. 33	<p>Inadequate attention given in the EA to review of options for developing and expanding the beneficial reuse of power station ash as an alternative to land disposal.</p> <p>What commitment does EE have to undertake review of reuse options?</p>	<p>Details of options for ash reuse and recycling are provided in Section 3.2.1 of the EA.</p> <p>EE will continue to seek options for the reuse of ash, however, in the meantime it is prudent to assume an appropriate storage/disposal facility is still required on the site. Therefore this option will continue to be used in conjunction with an ash disposal facility.</p> <p>Commitment 26 of the Statement of Commitments for the project states that EE shall continue to investigate and pursue opportunities for the reuse of ash. A report detailing the steps undertaken by EE to increase the reuse of ash shall be submitted to the Director-General and the DEC every two years from the date of project approval (or at such other interval agreed by the Director-General).</p> <p>Commitment No. 26 of the Statement of Commitments states: <i>EE shall continue to investigate and pursue opportunities for the reuse</i></p>

Submission/Agency	Specific Comments	Applicant Response
	<p>How would the review be monitored and controlled?</p> <p>How would a suitable alternative method be selected?</p> <p>No mention of ongoing review in Statement of Commitments.</p> <p>Inadequate attention given to the justification of the proposed ash disposal option. Mounded storage of ash and storage in coal mines cannot be excluded.</p>	<p>of ash. A report detailing the steps undertaken by EE to increase the reuse of ash shall be submitted to the Director-General and DEC every two years from the date of project approval or at such other interval agreed by the Director-General.</p> <p>This is further reinforced by a recommended condition of approval drafted by the DEC which states that:</p> <p><i>By 31 December 2011, the applicant shall submit details of a proposal that will be implemented, subject to obtaining development consent, to reuse all ash generated on the premises for beneficial purposes.</i></p> <p><i>If however, reuse options are slow to emerge, or they are considered to be unfeasible on economic, environmental, or industrial reliability criteria, then the Applicant may apply to the Director-General for an extension to the above deadline. This application must outline the available reuse options, justify why these cannot be – or have not been – adopted, and describe what measures will be implemented to facilitate the reuse of all ash generated on the premises for a beneficial purpose.</i></p> <p><i>After reviewing this application, the Director-General, in consultation with the Department of Environment and Conservation, may approve an extension to the above deadline, and may require the applicant to carry out further investigations or works into reuse of all ash generated on the premises for a beneficial purpose.</i></p> <p>Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Further details are provided in the attached letter. Of the options available to EE for ash disposal, the option presented will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option.</p> <p>Mounding ash as suggested is a short term option only and would in itself have certain environmental impacts such as dust emissions and visual impacts.</p> <p>EE submits that previous reviews of the option to dispose of fly ash in local mine workings both underground and open cut indicated that the underground mining technique used and the angle of repose of the fly</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>Stormwater quality is a major issue which requires drastic improvement.</p> <p>Were any investigations undertaken of possible underground stowage based on the delivery of dense phase slurry, which has a significantly greater angle of repose?</p>	<p>ash greatly inhibits the mine workings to be an effective disposal site. There are no local open cut mines which would allow for disposal at this time.</p> <p>By controlling ash placement in a smaller area as under the preferred option and maintaining the current drainage works, EE believe that the stormwater flows will be controlled such that there will be less likelihood of runoff to Lake Macquarie.</p> <p>EE has a Management Plan in place for water run-off that segregates stormwater and contaminated water and this will continue under the new ash dam proposal.</p> <p>Detailed hydrological studies will also be undertaken prior to the commencement of works on the ash dam which may result in improvements in water quality in the local area. These studies will augment the preliminary groundwater studies carried out to date which have shown that there is no migration to Myuna Bay from these sources.</p> <p>The use of dense phase placement into local coal mines was trialled by ACARP (Australian Coal Association Research Program) during 1998 and 2001. Whilst the tests yielded certain positive results, water was a particular concern – specifically groundwater contamination. Further studies on the effect on groundwater (leaching etc) would be required before it could be determined a viable option.</p> <p>The trial involved the use of cement trucks to deliver the slurry. At 5 cubic metres per truck, one day of flyash production from EPS (over and above the fly ash removed by FAA) would require approximately 400 truckloads. This method could only be used for small applications.</p> <p>If the dense phase pumping plant was to be utilised, the pumping requirements of dense phase would mean that, to go to different mine sites, larger, more expensive and less efficient pumps would be needed as the distance to the mine site is increased. This makes the specification of the pumps with regard to size difficult to predict. It was</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>No comparison of visual impacts of various options, nor commitment to any mitigation of impacts.</p> <p>The long term rehabilitation and land use of the site is not detailed in the EA.</p>	<p>also concluded that only a small quantity of ash could be disposed of using this process before the distance barrier became prohibitive.</p> <p>Additionally, there are no local open cut mines to allow disposal at this time. As the dense phase material flows to the lowest point, placing ash in operational mine sites is not possible as the lowest points are where the activity is continuing. Only sites declared as finished or abandoned would be suitable.</p> <p>Of the various feasible options for disposal of ash, the proposed option is expected to have the least visual impact.</p> <p>Mounding of ash on the existing ash dam is likely to be more visible from surrounding areas as the mound would need to be significantly higher than the height of the proposed ash dam expansion in order to accommodate a reasonable amount of ash.</p> <p>Visual impact is not, however the only reason for discounting the option of mounding ash on the existing dam footprint. The hydrological and dust management implications of this option were also considered to be limiting factors, as well as the fact that this would not provide a long term solution for ash disposal at EPS.</p> <p>The long term land use for the site is not yet known.</p> <p>EE has prepared further details on proposed rehabilitation of the site based upon current best practice. Details are provided in a report submitted to the Department previously under separate cover.</p> <p>It is intended that rehabilitation of the site be undertaken in stages, corresponding to the staged clearing which is proposed as part of the ash dam expansion.</p> <p>As rehabilitation techniques and methods will change and develop into the future, it is proposed that a detailed rehabilitation plan be submitted to the Director-General prior to the commencement of works for the ash dam expansion. In this way, EE and the DEC can be assured that rehabilitation of the site is undertaken in accordance with current best practice.</p> <p>Commitment 9 of the Statement of Commitments for the proposal</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>Request that EE develop a plan for accommodating a maximum of ash on the existing dam footprint and then estimate the time this would take.</p>	<p>requires EE to prepare and implement a rehabilitation plan for the site which will provide further detail in accordance with the DEC's comments.</p> <p>The issues surrounding the use of the existing ash dam footprint are detailed in Section 3.2 of the EA and again in the attached letter. The issues surrounding the use of the existing ash dam footprint are detailed in Section 3.2 of the EA and again in the attached letter. The hydrological impacts of this option are considered to outweigh the potential impacts of the proposed option.</p>
No. 34	<p>EA does not adequately address alternatives to proposed method of ash disposal.</p> <p>EA does not accurately identify all species present.</p> <p>Proposal is a wasted opportunity to promote alternative energy sources.</p> <p>Impact of proposal should be considered in conjunction with proposed "cooling water tempering reservoir".</p> <p>Failure to provide local community with opportunity for input to the project.</p> <p>Need to consider importance of flora and fauna species as Aboriginal Totems.</p>	<p>Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Further details are provided in the attached letter. Of the options available to EE for ash disposal, the option presented will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option.</p> <p>A flora and fauna survey was carried out to identify species present in the study area. The results of this study are supported by previous studies undertaken on the EPS site.</p> <p>The proposal does not involve an increase in the production of energy from coal at EPS. The proposed ash dam expansion is required to accommodate the ash disposal needs of the existing power station into the future.</p> <p>The proposed EGTG and expansion of the ash dam are unrelated to the proposed "cooling water tempering reservoir". The proposed "cooling water tempering reservoir" will be subject to a separate environmental assessment and approvals process.</p> <p>EE has consulted the community on this project via the Community Liaison Group and opportunity for input to the project has also been provided through the public exhibition process.</p> <p>An Aboriginal heritage assessment was undertaken as part of the EA, including consultation with local Aboriginal groups and no issues were raised in this regard.</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>Consultation with Westlakes Aboriginal Elders with regard to Aboriginal Land Claim over Crown Land.</p> <p>What commitment does EE have to undertake review of reuse options?</p> <p>How would the review be monitored and controlled?</p> <p>How would a suitable alternative method be selected?</p> <p>No mention of ongoing review in Statement of Commitments.</p> <p>Inadequate attention given to the justification of the proposed ash disposal option. Mounded storage of ash and storage in coal mines cannot be excluded.</p>	<p>The Aboriginal Land Claim has been finalised and land to be acquired by EE was not included in the claim.</p> <p>Commitment No. 26 of the Statement of Commitments states:</p> <p><i>EE shall continue to investigate and pursue opportunities for the reuse of ash. A report detailing the steps undertaken by EE to increase the reuse of ash shall be submitted to the Director-General and DEC every two years from the date of project approval or at such other interval agreed by the Director-General.</i></p> <p>This is further reinforced by a recommended condition of approval drafted by the DEC which states that:</p> <p><i>By 31 December 2011, the applicant shall submit details of a proposal that will be implemented, subject to obtaining development consent, to reuse all ash generated on the premises for beneficial purposes.</i></p> <p><i>If however, reuse options are slow to emerge, or they are considered to be unfeasible on economic, environmental, or industrial reliability criteria, then the Applicant may apply to the Director-General for an extension to the above deadline. This application must outline the available reuse options, justify why these cannot be – or have not been – adopted, and describe what measures will be implemented to facilitate the reuse of all ash generated on the premises for a beneficial purpose.</i></p> <p><i>After reviewing this application, the Director-General, in consultation with the Department of Environment and Conservation, may approve an extension to the above deadline, and may require the applicant to carry out further investigations or works into reuse of all ash generated on the premises for a beneficial purpose.</i></p> <p>Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Further details are provided in the attached letter. Of the options available to EE for ash disposal, the option presented will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option.</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>Stormwater quality is a major issue which requires drastic improvement.</p> <p>Were any investigations of possible underground stowage based on the delivery of dense phase slurry, which has a significantly greater angle of repose?</p>	<p>Mounding ash as suggested is a short term option only and would in itself have certain environmental impacts such as dust emissions and visual impacts.</p> <p>EE submits that previous reviews of the option to dispose of fly ash in local mine workings both underground and open cut indicated that the underground mining technique used and the angle of repose of the fly ash greatly inhibits the mine workings to be an effective disposal site. There are no local open cut mines which would allow for disposal at this time.</p> <p>By controlling ash placement in a smaller area as under the preferred option and maintaining the current drainage works, EE believe that the stormwater flows will be controlled such that there will be less likelihood of runoff to Lake Macquarie.</p> <p>EE has a Management Plan in place for water run-off that segregates stormwater and contaminated water and this will continue under the new ash dam proposal.</p> <p>Detailed hydrological studies will also be undertaken prior to the commencement of works on the ash dam which may result in improvements in water quality in the local area. These studies will augment the preliminary groundwater studies carried out to date which have shown that there is no migration to Myuna Bay from these sources.</p> <p>The use of dense phase placement into local coal mines was trialled by ACARP (Australian Coal Association Research Program) during 1998 and 2001. The tests yielded certain positive results. However, water was a particular concern – specifically related to groundwater contamination. Further studies on the effect on groundwater (leaching etc) would be required before it could be determined whether this was a viable option.</p> <p>The trial involved the use of cement trucks to deliver the slurry. At 5 cubic metres per truck, one day of flyash production from EPS (over and above the fly ash removed by FAA) would require approximately 400 truckloads. This method could only be used for small applications.</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>No comparison of visual impacts of various options, nor commitment to any mitigation of impacts.</p> <p>The long term rehabilitation and land use of the site is not detailed in the EA.</p>	<p>If the dense phase pumping plant was to be utilised, the pumping requirements of dense phase would mean that, to go to different mine sites, larger, more expensive and less efficient pumps would be needed as the distance to the mine site is increased. This makes the specification of the pumps with regard to size difficult to predict. It was also concluded that only a small quantity of ash could be disposed of using this process before the distance barrier became prohibitive.</p> <p>Additionally, there are no local open cut mines to allow disposal at this time. As the dense phase material flows to the lowest point, placing ash in operational mine sites is not possible as the lowest points are where the activity is continuing. Only sites declared as finished or abandoned would be suitable. The only mine that may be useful for this would be Awaba and EE are currently in discussions regarding the volume that may be used at this site. If it is of significance, EE will review this option.</p> <p>Of the various feasible options for disposal of ash, the proposed option is expected to have the least visual impact.</p> <p>Mounding of ash on the existing ash dam is likely to be more visible from surrounding areas as the mound would need to be significantly higher than the height of the proposed ash dam expansion in order to accommodate a reasonable amount of ash.</p> <p>Visual impact is not, however the only reason for discounting the option of mounding ash on the existing dam footprint. The hydrological and dust management implications of this option were also considered to be limiting factors, as well as the fact that this would not provide a long term solution for ash disposal at EPS.</p> <p>The long term land use for the site is not yet known.</p> <p>EE has prepared further details on proposed rehabilitation of the site based upon current best practice. Details are provided in a report submitted to the Department previously under separate cover.</p> <p>It is intended that rehabilitation of the site be undertaken in stages,</p>

Submission/Agency	Specific Comments	Applicant Response
	<p>Request that EE develop a plan for accommodating a maximum of ash on the existing dam footprint and then estimate the time this would take.</p> <p>No consultation undertaken with local Aboriginal community.</p> <p>EE community forum consists of hand-picked persons who do not represent the community.</p> <p>Object to potential impacts upon threatened species.</p>	<p>corresponding to the staged clearing which is proposed as part of the ash dam expansion.</p> <p>As rehabilitation techniques and methods will change and develop into the future, it is proposed that a detailed rehabilitation plan be submitted to the Director-General prior to the commencement of works for the ash dam expansion. In this way, EE and the DEC can be assured that rehabilitation of the site is undertaken in accordance with current best practice.</p> <p>Commitment 9 of the Statement of Commitments for the proposal requires EE to prepare and implement a rehabilitation plan for the site which will provide further detail in accordance with the DEC's comments.</p> <p>The issues surrounding the use of the existing ash dam footprint are detailed in Section 3.2 of the EA and again in the attached letter. The hydrological impacts of this option are considered to outweigh the potential impacts of the proposed option.</p> <p>Consultation with the local Aboriginal community was undertaken for the purposes of the Aboriginal heritage assessment in accordance with DEC guidelines.</p> <p>The EE Community Forum is not hand-picked. The only requirement for attendance is that members represent a particular community group.</p> <p>The flora and fauna assessment undertaken in respect of the proposal concludes that there will be no significant impact upon threatened species, populations or ecological communities provided that appropriate safeguards are implemented on the site.</p> <p>Section 3.2 of the EA describes the alternatives considered by EE for ash disposal. Of the options available to EE for ash disposal, the option presented will have the least impact in terms of the clearing of vegetation, impact on threatened species and uptake of undeveloped land and was therefore chosen as the preferred option.</p> <p>EE has reviewed the proposed mitigation measures in the light of the comments received during the exhibition period and has prepared a supplementary report detailing additional mitigation measures to be</p>

Submission/Agency	Specific Comments	Applicant Response
No. 35	No new issues raised.	incorporated into the project including the provision of compensatory habitat. This report has been submitted to the DoP under separate cover.



Legend

- Approximate area of land acquisition
- Extent of proposed ash dam vegetation clearance**
- Approximate extent of land clearance end of Year 1
- Approximate extent of land clearance end of Year 5
- Approximate extent of land clearance end of Year 10

0 50 100 200 300 400 500

Metres

