Our ref: 2270096A-ENV-LTR-001 RevA

Your ref: 2270096A-ENV-LTR-001

By email
Andy.Nixey@planning.nsw.gov.au

22 June 2018

Public

Andy Nixey
Department of Planning and Environment
GPO BOX 39
SYDNEY NSW 2001

Dear Mr Nixey

SSD 6471 – SYDNEY MODERN – ART GALLERY OF NSW– RESPONSE TO SUBMISSIONS (RtS) REPORT- MARINE IMPACT ASSESSMENT

I am writing to you in reply to comment "a" by the Environment Protection Authority on the seawater heat exchange system proposed in the RtS report concerning the above project. The comment and recommendation is reproduced below:

(a) Heat exchange system design

The EPA notes that the design of Seawater Heat Exchange System described in Appendix H to the Report appears different to the design described in the related document accompanying the EIS, including an increase of:

- *net heat rejection capacity from 1,600 to 2,600 kilowatts (~60% increase); and*
- *twin outlet pipe diameter from 300 to 400 millimetres*

The EPA notes that the EIS states that the outlet pipe design diameter is 300 millimetres, however the modelling assumes a pipe diameter of 400 millimetres as a worst-case scenario.

Recommendation

The proponent be required to provide a revised assessment that clearly shows the predicted impact of the increased net heat rejection capacity and revised discharge design on the receiving waters of Sydney Harbour, including a detailed analysis of the extent of the thermal plume with reference to the existing modelling (or revised modelling should existing modelling no longer be representative of the amended seawater heat exchange system design).

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It is proposed that the return seawater is conveyed via a 400mm pipe back to the ocean. This pipe size is designed to accommodate a discharge water flow rate of 117L/s, with a thermal capacity of 2,600kW.

The modelling of the heat plume dispersion was performed using a flow rate of 117L/s and a 400mm discharge pipe. The extent and persistence of the heat plume introduced into the Bay under this design is considered within the modelling report and the Marine Impact Assessment.

The modelling and impact assessment are consistent with the proposed design and as such, any updates or changes are unnecessary.

Yours sincerely

Amir Hedjripour
Principal Water Resources Engineer