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Contact: Dove Craig Patterson (02) 4224 4100

Manager Industry
Department of Planning and Infrastructure
(Attention: Chris Ritchie)
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Dear Sir

PORT KEMBLA COPPER STACK DEMOLITION WASTE MANAGEMENT PLAN

I am writing in response to your request for comments from the Environment Protection Authority (EPA) on 2 December 2013 regarding the adequacy of the "Waste Management Plan" prepared by Port Kembla Copper (PKC). This plan formed part of the revised Stack Demolition Management Plan (SDMP).

As you are aware on 14 November 2013, the EPA provided a written response to the Department of Planning and Infrastructure (DP&I) on the PKC SDMP. The EPA understands DP&I is seeking advice from EPA on whether the revised Waste Management Plan adequately addressed previous comments raised by the EPA made in our letter of 14 November 2013.

The Waste Management Plan has included additional information in response to the EPA's previous comments. The 2013 SDMP and the 2010 Demolition Management Plan provide a broad outline of PKC's intended approach to waste management. Further detail is however required to underpin these plans to ensure all risks are understood and that effective precautions and measures are in place to address these risks.

On the basis of a review of the information provided, the EPA provides the following comments:

1. The EPA promotes the reuse and recycling of wastes where it is safe and practical to do so and it provides the best environmental outcome. Any reuse of materials onsite must be "fit for purpose" and must not result in any adverse impacts to the environment. It is also an offence to cause land pollution. Prior to disposing of any material onsite, PKC will need to provide information which clearly demonstrates the material is 'fit for purpose' for on site disposal, both in terms of environmental and future land use considerations. This should include information on where and how the rubble will be used and describe any additional environmental controls such as capping, or management of surface or ground water. For example, fill or engineering material generated from the bricks may have different environmental requirements than material generated from the concrete.
2. The plan currently states that it is not possible to separate bricks from concrete, due to the concrete encircling the brick chimney. PKC should as far as practicable aim to sort the concrete from the bricks after stack felling. The refractory bricks are likely to require a higher degree of environmental controls than the concrete, especially when it comes to any crushing operations. This is due to the presence of heavy metals on the inner surface of the inner brick stack. Sorting of concrete from bricks will also reduce the potential for the outer concrete stacks not exposed to industrial emissions being 'contaminated' with the refractory bricks from the internal stack that have been exposed to industrial emissions. This could be achieved while the reinforcing steel is being removed from the concrete. The

- separate classification/management of these materials will potentially provide PKC with greater flexibility in terms of their ultimate reuse or disposal.
3. The plan states that after felling, stack rubble will be classified according to the EPA Waste Classification Guidelines to determine its applicability for reuse on site or other disposal options. The refractory bricks and concrete waste stream should be assessed separately against the EPA Waste Guidelines to determine their applicability for reuse or disposal. This guideline requires wastes to be tested for asbestos, metals and/or radioactivity if required. The bricks may require a higher degree of sampling than the concrete.
 4. Dust controls during crushing and rubble handling/emplacement/disposal will be very important and need to be described. This is especially true for any material containing refractory bricks given the presence of heavy metals and the potential presence of crystalline silica. As stated above, these bricks are likely to require a higher degree of environmental controls than the concrete. PKC should identify the crushing methodology for each waste stream and describe the associated environmental controls. This should include but not be limited to use of water sprays for dust control, whether the waste can be crushed safely outside, or if crushing will be carried out inside a building such as the existing Bulk Concentrate Shed (as previously stated by PKC in the SDMP).
 5. The EPA has recently received questions from the public regarding the potential presence of Technologically Enhanced Naturally Occurring Radioactive Materials (TENORMs) on/in the refractory bricks in the stack at PKC as a result of past industrial emissions. As part of an ANSTO independent Illawarra Radionuclide Investigation (2000 to 2003) a study of potential sources of ionising radiation in the Illawarra was undertaken. A desk top study concluded that PKC (when it was operating) was a potential source but exposures were well within the public dose limit and also within the natural variations expected in natural background radiation. Notwithstanding these findings, PKC should undertake radiation monitoring of the bricks to confirm that unacceptable levels of TENORMs are not present. This monitoring could be performed on the bricks already collected from the stack that were previously exposed to the industrial emissions. As all bricks will contain natural radioactivity, a comparison should be made between the inner surface of brick(s) from the inner chimney, bricks from the outside of the inner chimney and other bricks (For example, common household brick) to determine if there has been any enhancement in levels and enable any risk to be evaluated and communicated to the community. The monitoring could be undertaken using a Gamma Spectrometer which will give an indication of the relative concentration of radiation. These results will also inform if any additional radiological testing, air quality monitoring and/or control measures are required during stack felling and the subsequent crushing/handling/separation operations.

The EPA has made PKC and Workcover aware of the above matters.

Please contact Craig Patterson on (02) 4224 4100 if you require any further advice on the above matters.

Yours sincerely



6/12/13

PETER BLOEM
Manager Illawarra
Environment Protection Authority