## Appendix J - Project Risk Register - WEWPCC RAS and FW Pipe Replacement Project

| Risk Registe                 | egister Template Version 4.5-nwa2 |                          |  |                                   |                           |            |                      |                           |          |                            |                          |  |   |
|------------------------------|-----------------------------------|--------------------------|--|-----------------------------------|---------------------------|------------|----------------------|---------------------------|----------|----------------------------|--------------------------|--|---|
|                              | System                            |                          | Program Information about the Risk Event |                                   |                           |            |                      |                           |          |                            |                          |  |   |
| Risk ID;<br>Sequential<br>ID | Last<br>Reviewed<br>Date          | Status<br>Change<br>Date | Identification<br>Date                   | Project                           | Phase                     | Task Group | Contract (Bid<br>Op) | Operational or<br>Capital | Facility | Process Area<br>(optional) | Discipline<br>(Optional) | Risk Type;<br>Program or Project Level<br>Risk | Category of Risk;<br>Design, Construction, HR,<br>Procurement etc |
| 1                            | 4/22/2015                         | 4/22/2015                |  | WEWPCC<br>RAS & FW<br>Replacement | Construction              |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |
| 2                            | 4/22/2015                         | 4/22/2015                | 4/22/2015                                | WEWPCC<br>RAS & FW<br>Replacement | Construction              |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |
| 3                            | 4/22/2015                         | 4/22/2015                | 4/22/2015                                | WEWPCC<br>RAS & FW<br>Replacement | Planning                  |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |
| 4                            | 4/22/2015                         | 4/22/2015                | 4/22/2015                                | Replacement                       | Construction              |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |
| 5                            | 4/22/2015                         | 4/22/2015                | 4/22/2015                                | WEWPCC<br>RAS & FW<br>Replacement | Construction              |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |
| 6                            | 4/22/2015                         | 4/22/2015                |  | WEWPCC<br>RAS & FW<br>Replacement | Planning/<br>Construction |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |
| 7                            | 4/22/2015                         | 4/22/2015                | 4/22/2015                                | WEWPCC<br>RAS & FW<br>Replacement | Construction              |            |                      | Capital                   | WEWPCC   |                            |                          | Project  |   |

| Risk Event Identification           |   |   |   |  |  |  |  |  |  |
|-------------------------------------|---|---|---|--|--|--|--|--|--|
| Threat or<br>Opportunity<br>(T / O) | Due to (Cause Event)  | this could occur (Result<br>Event )   | Resulting in (this Effect)                              | Threat / Opp Owner<br>(per Agreement);<br>CofW or Shared | Threat / Opp owner<br>(Individual responsible) | Status<br>(Identified / In<br>Development /<br>Defined / Closed) |  |  |  |
| Т                                   | Construction work (RAS) has to be done in a seasonal window   | Construction and commissioning may not run to plan or construction takes longer                                       | Delayed commissioning;<br>potential license exceedances |  |  |  |  |  |  |
| Т                                   | Want to hit 2015 winter construction season (RAS)   | Design may not be ready<br>(Consultant performance, e.g.<br>due to over work)   | Delays construction (RAS) by<br>12 months               |  |  |  |  |  |  |
| Т                                   | Want to hit 2015 winter construction season (RAS)   | Length of time to award design contract and subsequently construction Bid Opp.  | Delays construction (RAS) by<br>12 months               |  |  |  |  |  |  |
| Т                                   | Pipes to be painted to match existing plant colour.   | There are seasonal constraints for applying paint coatings (humidity)   | Paint coatings do not last max life                     |  |  |  |  |  |  |
| Т                                   | Two RAS lines in series with intermediate process stabilization                                       | Process may take longer to stabilize  | Second RAS replacement delayed 12 months                |  |  |  |  |  |  |
| Т                                   | Max 8 hr. down time permitted for FW system   | Multiple choices for plan to replace FW pipe; design could take longer than expected; commissioning could take longer | Project cost and schedule higher; delays to FW and RAS  |  |  |  |  |  |  |
| Т                                   | Plan to replace FW line with a parallel line and tie in at both ends at the end (max 8 hr. down time) | Tie in's take longer;   | Process upset and compliance failure                    |  |  |  |  |  |  |

## Project Budget or Target Cost (\$,000) Insert \$ value

|                                 |                  | Risk Event A            | Assessment   |                                     |  |   | Risk Response Assessment (based on an Implemented Risk Management Plan - future state)   |                                      |                                  |                               |                                   |         |                                    |  |  |
|---------------------------------|------------------|-------------------------|--|-------------------------------------|--|---|--|--------------------------------------|----------------------------------|-------------------------------|-----------------------------------|---------|------------------------------------|--|--|
| Magnitude of<br>Risk Event(1-5) | Likelihood (1-5) | Assessed Score<br>C X L | Estimated<br>Impact<br>(\$,000) what is<br>cost if risk<br>occurred) | Financial Impact<br>(% Target Cost) | Financial risk<br>prior to<br>Mitigation | Risk Response Type<br>(Avoidance, Transferance,<br>Mitigation,<br>Acceptance) | Risk Response Plan -<br>Actions  | Residual<br>Magnitude occur<br>(1-5) | Residual<br>Likelihood (1-<br>5) | Assessed<br>Residual<br>Score | Cost of<br>Mitigation<br>(\$,000) | Adopted | Financial risk<br>after mitigation | Trigger date<br>(mandatory<br>review date) |  |
| 3                               | 3                | 9                       |  | #VALUE!                             | -  | Mitigation  | Plan de-commissioning/<br>construction/commissioni<br>ng very well, include<br>mitigations. Include for<br>pipe preparation before<br>de-commissioning | 3                                    | 2                                | 6                             |                                   |         |                                    |  |  |
| 2                               | 2                | 4                       |  | #VALUE!                             | -  |   |  |                                      |                                  | 0                             |                                   |         |                                    |  |  |
| 2                               | 4                | 8                       |  | #VALUE!                             | -  | Mitigation  | Prioritize and resource<br>RFP; Communicate<br>importance to<br>stakeholders   | 2                                    | 2                                | 4                             |                                   |         |                                    |  |  |
| 1                               | 2                | 2                       |  | #VALUE!                             | -  |   |  |                                      |                                  | 0                             |                                   |         |                                    |  |  |
| 3                               | 1                | 3                       |  | #VALUE!                             | -  | Acceptance  |  | 3                                    | 1                                | 3                             |                                   |         |                                    |  |  |
| 3                               | 3                | 9                       |  | #VALUE!                             | -  | Mitigation  | Split design packages for FW and RAS; Consultant provides early concept of FW plan to get buy-in; Avoid concurrent FW and RAS construction             | 2                                    | 2                                | 4                             |                                   |         |                                    |  |  |
| 1                               | 2                | 2                       |  | #VALUE!                             | -  |   |  |                                      |                                  | 0                             |                                   |         |                                    |  |  |

| Γ |                          | Risk Response Plan - Execution Log |          |        | Contingency Plan |  |                                   |
|---|--------------------------|------------------------------------|----------|--------|------------------|--|-----------------------------------|
| 3 | Mitigation<br>Evaluation | Action Log Reference               | Comments | k<br>4 | Contingency plan | Risk Level<br>k Before<br>5 Mitigation | Risk Level<br>After<br>Mitigation |
|   |                          |                                    |          |        |                  | High                                   | Med                               |
|   |                          |                                    |          |        |                  | Low                                    | Not Assessed                      |
|   |                          |                                    |          |        |                  | High                                   | Low                               |
| ľ |                          |                                    |          |        |                  | Low                                    | Not Assessed                      |
| İ |                          |                                    |          |        |                  | Med                                    | Med                               |
|   |                          |                                    |          |        |                  | High                                   | Low                               |
|   |                          |                                    |          |        |                  | Low                                    | Not Assessed                      |