ADMINISTRATIVE REPORT

Topic: Development Permit 14-D-040

Introduction:

TransAlta MidAmerican Partnership (TAMA Power) is proposing to construct and operate a new 834 megawatt combined-cycle natural gas-fired electrical generation station located near the existing TransAlta Corporation (TransAlta) coal-fired power generation facilities in the Lake Wabamun area.

Facts (Background Information):

The proposed TransAlta Sundance 7 project will be constructed mostly on NW-10-52-04-W5 however there will be some development on the north end of SW-10-52-04-W5. The power plant facility will be developed on about 17 acres of land.

The subject lands are situated just south of Wabamun Lake and east of the existing Sundance Cooling pond on Sundance Road half a mile west of Range Road 42. The Paul Band Reserve is located immediately to the north of the subject lands. The lands are currently undeveloped and historically used for extensive agriculture activities and as a separation buffer from the existing Cooling Ponds and other Power Plant infrastructure immediately to the west. The closest residence is located on SE-10-52-04-W5, on the southeast corner of the quarter section.

The proposed site for the Sundance 7 project is identified in the Land Use Bylaw as being located within the Resource Extraction District and Highvale Mine End Direct Control District. The subject lands are also subject to the Highvale End Land Use Area Structure Plan and have been districted from the Ecological Conservation Area and Agriculture/Nature Conservation District to Direct Control District. Furthermore the Municipal Development Plan was amended to redesignate the subject lands to Industrial and Commercial Development. The subject lands are not located within an Environmentally Significant Area as per the recently completed Parkland County's 2014 Environmental Conservation Master Plan (ECMP).The proposed project is compliant with all Parkland County documents.

<u>Project Information</u>

The Sundance 7 development is a joint partnership between TransAlta Corporation and MidAmerican Energy Holdings Company creating "TAMA Power". TransAlta will construct, manage, operate and maintain the Sundance 7 facility for TAMA Power. The estimated capital cost for this project is $1.6 billion.

The construction of the Sundance 7 facility will utilize as much of the existing infrastructure as possible which will reduce the amount of land being developed. The existing cooling pond, water intake and discharge structure at the North Saskatchewan River will be used for the new facility.

TAMA has indicated that at 51% generation efficiency, Sundance 7 is 17% more efficient than a traditional coal fired facility and will produce 66% less carbon dioxide gas (CO_2) emission levels than a coal fired facility. This new facility will produce 96% less nitrogen oxide (NO_2) and sulfur dioxide (SO_2) than traditional coal fired plants. The Sundance 7 facility will be equipped with the advanced emission controls technologies to meet performance expectations for air emissions outlined in the Clean Air Strategic Alliance Standards and the Alberta Ambient Air Quality Objectives and Guidelines. TransAlta will have continued emission monitoring systems to ensure the regulatory requirements are met. The cumulative effects of Sundance 7 emissions will be assessed taking into consideration the operating facilities of Sundance, Keephills, the Highvale Mine and other existing industrial sources.

TransAlta is expecting to begin construction in mid 2015 and commissioning the facility in 2018. It is anticipated that during the peak construction time that there will be between 400 and 600 employees on site. Once the Sundance 7 facility is operational it is expected that there will be approximately 20 full time operators, 9 maintenance staff and 13 administration staff.

Public Consultation

TransAlta is committed to being an active partner in the local community throughout the entire life cycle of Sundance 7. The public consultation for this project involves mail outs, open houses, one on one meetings, updates on the TransAlta newsletter, up to date information on TransAlta's website. TransAlta met with Aboriginal groups, landowners and residents, government agencies and elected officials. The main concerns that were brought forward were the impact of the traffic that will be generated from the project, air quality and noise.

TransAlta has provided the following reports and assessments for review:

- Traffic Impact Assessment
- Traffic Management Plan
- Risk Assessment
- Biophysical Assessment
- Air Quality Assessment
- Water Quality Baseline and Effects Assessment

Traffic Impact Assessment

The TIA identified access to the Project area will be primarily from Highway 627 using a portion of Range Road 42 (Paul Band Road) and Township Road 552 (Sundance Road).

This report documented the observations of the existing traffic, analyzed the impact of the additional traffic generated during the construction and operation of the proposed project. The study reviewed the geometric configuration of Highway 627/Highway 770 intersection and Highway 627/Paul Band Road intersection. Traffic operation analysis was carried out for the peak construction year of 2017 and 20 years horizon in 2033 for both morning and afternoon peak hours. Intersection improvement warrant analysis was completed based on Alberta Transportation's Highway Geometric Guide. Based on the analysis, it is concluded that:

- Both Highway 627/Highway 770 and Highway 627/Paul Band Road intersections have adequate intersection treatments for the projected traffic volume in both project construction year (2017) and operation horizon year (2018).
- Traffic will operate at an acceptable level of service at both intersections in both 2017 and 2033.
- The site generated traffic has very limited impact on the traffic operation of the two intersections in both the construction period and the design horizon year.

Highway 627 and Highway 770

- According to AT's Highway Geometric Design Guide (1999), a Type III intersection treatment is warranted. The existing intersection treatment is similar to a Type IV with the free flow on Highway 770, which is adequate for the project traffic operations and no additional intersection improvements is required.
- The critical movements are the eastbound (EB) and westbound (WB) left turn traffic on Highway 627, operating with Level of Service of D in their respective peak hours in 2033, which is acceptable on highway intersections.
- The site generated traffic has very limited impact on the traffic operation of this intersection in both the construction period and the design horizon year.

Highway 627 and Paul Band Road

- According to AT's Highway Geometric Design Guide (1999), a Type III intersection treatment is warranted. The existing intersection treatment is similar to a Type III with the free flow on Highway 627, which is adequate for the project traffic operations.
- The critical movement is the southbound (SB) left turn traffic on Paul Band Road, operating with Level of Service of B in the peak hours of the design horizon year, which is acceptable on minor roads at intersections.
- The site generated traffic has very limited impact on the traffic operation of this intersection in both the construction period and the design horizon year.

Traffic Management Plan

The Sundance 7 project will make every effort to work with the contractors and the community to ensure a well-managed traffic plan is developed with safety as a priority.

Contractors will be encouraged to utilize the busing to and from the site in order to reduce the traffic. Furthermore shifts will be coordinated with other industry in the area to reduce the amount of traffic on the road at certain times.

TransAlta is exploring the possibility of utilizing the railway as a means to bring material to the site further reducing traffic.

Risk Assessment

TransAlta contracted Golder Associates to do the Risk Assessment for the Sundance 7 Project the assessment was primarily focused on the ammonia storage tank. The risk assessment calculated site-specific public safety risks associated with accidental release of ammonia. There are four residences in the area of the Sundance 7 project with the closest dwelling being 1250 metres to the southeast. As part of the overall commitment to safety, TransAlta is designing a Selective Catalytic Reduction (SCR) system, which will reduce Nitrogen Oxide emissions (NOx). The SCR is a requirement of Alberta Environment and Sustainable Resource Development (AESRD) and the Clean Air Strategic Alliance (CASA). The results from the analysis can be used to develop an Emergency Planning Zone for the Sundance 7 site and well as satisfy Canadian Environmental Protection Act and Environmental Emergency Regulations.

Biophysical Assessment

A Biophysical Assessment was completed as part of the amendment application as the subject lands are within 800 meters of an environmentally significant area (Wabamun Lake) according the Parkland County's 2014 ECMP. The biophysical assessment concluded that there are no environmental features which would preclude a change in designation of the subject lands. Also the study stated that the subject lands are substantially similar in nature to lands with existing power plants operating on them which are already within the proposed designations.

With the implementation of the mitigation measures described in the report, the project is expected to result in minimal adverse environmental effects on soils, water quality of quantity, plant species or communities, or wildlife and wildlife habitat.

The report suggest the following mitigating measures:

- Construction equipment to enter the site is clean, free of mud, vegetation and seeds.
- Areas not containing permanent facilities to be reclaimed
- Use of certified weed-free seed mixes
- Vegetation clearing to take place as per the Alberta Wildlife Act and the Migratory Birds Convention Act
- Wildlife collision awareness.
- The project will require one Class II wetland to be removed as a result of the project therefore there will be a requirement for Wetland compensation.

Air Quality Assessment

The objective of the assessment is to identify and analyze potential air quality changes associated with the atmospheric emissions released from the project and existing developments in the area. The Air Quality Assessment considers the effect of the project emission under various routine and non-routine operating scenarios in combination with emissions from existing and approved regional sources. The air quality assessment focusses on compliance with existing Alberta regulations, objectives and guidelines.

Based on the results of the assessment, potential adverse changes to the air quality from the Sundance 7 project are expected to be minimal.

Water Quality Baseline and Effects Assessment

The new Sundance Power Plant will utilize the existing cooling pond, as a source of cooling water for the operation of the plant. The cooling pond receives make-up water pumped from the North Saskatchewan River (NSR) and releases blowdown water to the NSR to maintain the pond water quality and level.

The project has the potential to affect surface water quality two ways:

- Changes in water quality of the NSR due to changes in the cooling pond blowdown chemistry and flows; and
- Acidification of nearby water bodies due to releases of acidifying emissions from the plant.

Water quality data was evaluated for both the immediate vicinity where surface water quality may be directly affected and for the larger area where air emissions from the project may cause acidification of surface water bodies.

The report concluded that changes to the NSR water quality due to the proposed project are not anticipated to result in concentrations above water quality guidelines at the edge of the mixing zone. Concentrations of parameters that are currently above guidelines in the NSR are predicted to decrease as a result of the project. Therefore, effects due to water quality changes in the NSR are anticipated to be negligible.

The potential for acidification effects to the surrounding area are also expected to be negligible.

Referral Comments:

Alberta Transportation:

"From the legal land location given in the Parkland County development permit application form, the development would be outside of the development control zone where they must obtain a permit from Alberta Transportation (300m from the highway ROW or within an 800m radius of the intersection of Highway 627 and the local road). From the drawings in their pamphlet, the development looks to be closer, perhaps within NW 3 but may still be outside our development control zone. In principal, AT does not object to this development so long as it does not adversely affect the operation of the provincial highway."

"We note that this is a large project that is likely to generate significant traffic and that the intersection of RR 42 with Hwy 627 has some challenges. It has poor sight distances and the geometric improvements are constrained by the coal mine's highway bridge over their haul road west of the intersection, making the tapers on this side of the intersection short. It is my understanding that the underpass is no longer needed because the mining on the south side of the highway is complete."

"I would recommend that Parkland County require TransAlta to undertake a traffic impact assessment and ensure that any warranted improvements to the intersection are constructed. The department would be open to them removing their bridge and regarding the highway to improve sight lines if needed to make this intersection meet the needs of their development traffic."

TransAlta requires the underpass and has no plans at this time to remove it.

Parkland County Engineering Services
The Traffic Impact Assessment (TIA) was reviewed by Parkland County Engineering, there are no concerns with the analysis and recommendations of the TIA. Parkland County Engineering agrees with the recommendation that roadway and intersection improvements are not required for this development to proceed.

Regulatory requirements:

In Canada, provincial governments have the primary regulatory responsibility for the review of applications for natural gas fuelled power generation facilities.

- TAMA Power will submit a Project Description to the Canadian Environmental Assessment Agency which will then determine if a Federal Environmental Assessment is required for this project. TAMA Power received notice on Aug 22, 2014 that a Federal EA is not required for the project.
- TAMA Power has submitted their applications to AESRD for approvals under the Environmental Protection and Enhancement Act and the Water Act. The Application was submitted April 14, 2014 and has been deemed administratively complete, Public Notice will be published in November
- This project requires approval from Alberta Utilities Commission (AUC) under the Hydro and Electric Energy Act. A Facility Application will be submitted to the AUC that will include technical details, an assessment of potential environmental effects and summary of consultation efforts. TAMA will also require a Connection Order from the AUC. The AUC application for SUN7 was submitted April 22nd and has been reviewed and deemed complete. Public Notice of the Application was published with a closing date of October 16th.
- Connection Order Status:
  TAMA Power is currently in the preliminary development stages of providing a connection to the Sundance 7 power plant. They are working with AESO and AltaLink to review the alternatives and finalize plans for the connection. At this current time they are investigating both 240 kV and 500 kV transmission options. The present schedule calls for a Facility Application to be submitted in the 2nd quarter of 2015 and construction of the transmission line and substation to begin 3rd quarter of 2016. Completion of the transmission line will be 2nd quarter of 2018.

  As TAMA Power finalizes their plans, information sessions and stakeholder communications will take place regarding the substation and transmission line. Invitations will be extended to all affected parties.
- TAMA Power received clearance for the Project site under the Historical Resources Act (RSA 2000, c.H-9) on May 16, 2014
- Approvals are required under the Alberta Safety Codes Act. TAMA confirms that approvals are required and will be obtained through the building permit request and will come from the contractor who will be constructing the facility.

Alternatives:

1. Council could approve Development Permit 14-D-040 with amended conditions of approval

2. Council could table Development Permit 14-D-040 and request additional information.

3. Council could deny Development Permit 14-D-040.

Conclusion/Summary:

In conclusion, Administration supports the proposed development permit application, provided the conditions as noted in Schedule “A” to this report are included in Development Permit 14-D-040.

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