# SECTION 106 PARTIAL PROJECT REVIEW

Edward J. Moran Electric Generating Station (Moran Plant), Burlington, VT


*Moran Plant, S elevation (view NE)*

*prepared for*

City of Burlington
Community and Economic Development Office
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**INTRODUCTION & METHODOLOGY**

Section 106 of the National Historic Preservation Act of 1966 (33 CFR 800) established a national policy for historic preservation and was designed to prevent unnecessary harm to, or alteration of, important cultural resources. It requires that any project requiring Federal funding, licensing or permitting be evaluated for its effects on historic properties, defined as any resources "included in or eligible for inclusion in, the National Register of Historic Places" (33 CFR 800.16). Properties are considered eligible for listing in the National Register of Historic Places (NRHP) if they possess both significance and a high degree of integrity.

Significance is generally assessed according to four criteria, and a building is considered to possess significance if it:

A) is associated with events that have made a significant contribution to the broad patterns of our history;

B) is associated with the lives of persons significant in our past;

C) embodies the distinctive characteristics of a type, period or method of construction, represents the work of a master, possesses high artistic values or represents a significant and distinguishable entity whose components may lack individual distinction; or

D) has yielded, or is likely to yield, information important in prehistory or history.

Integrity is assessed in seven distinct aspects: location, design, materials, workmanship, setting, feeling and association. Properties with greatly diminished integrity, for example those where the original design has been substantially altered and features such as windows, doors and exterior siding have been replaced, are generally considered ineligible for listing.

If a property is determined to be historic, then the effect of the proposed changes must be evaluated and classified. These classifications are:

No effect – the project has no potential to affect the historic property in any way.

No adverse effect – the project will not alter the characteristics that qualify the property for inclusion in the National Register.

Adverse effect – the project will alter the characteristics that qualify the property for inclusion in the National Register and diminish its integrity of materials, workmanship, design, feeling, location, setting and/or association in such a manner as to render it ineligible for listing.

If a property is restored, rehabilitated, repaired, maintained, stabilized, remediated or otherwise changed in accordance with the Secretary's Standards, then, assuming that the State or Tribal Historic Preservation Officer agrees, the project will not be considered an adverse effect.

The former J. Edward Moran Electric Generating Station (commonly referred to as the Moran Plant) and the proposed changes, described below, were assessed according to the above established criteria, through field investigation and summary archival research.

**PROJECT PROPOSAL**

The City of Burlington is proposing to rehabilitate the 1954 Moran Plant into a recreational facility. The proposal for the building, which was decommissioned in 1986 and stripped of the majority of its machinery and features, will accommodate several tenants, including a restaurant, museum, sailing center and indoor climbing facility.

Federal involvement in the rehabilitation project requires Section 106 review. The majority of this review requirement will be satisfied by and during the city's pursuit of a Historic Preservation Certification Application (or Rehabilitation Investment Tax Credit (RITC)) for the project. That process is currently underway and may take some time to complete. Consequently, since the City of Burlington is anxious to begin certain elements of the project, this report addresses solely the proposal to seal the basement level of the Moran Plant. This entails:

- removal of existing standing water and debris, including metal, wood, concrete, asbestos - which is assumed to be present – and contaminated sediment;
- industrial cleaning of the basement level;
- subsequent visual inspection and/or sampling to determine presence of additional toxins;
- clearance air sampling;
- structural fill of generator pits and ash trenches with fly ash stabilized granular fill or cementitious/pozzolan stabilized earthen fill wrapped in a geotextile or an acceptable substitute;
- potential removal of existing steel stairs and catwalks to allow for heavy equipment utilized in this process;
- subsequent encapsulation of trenches and pits with 5" reinforced concrete slabs, formed and poured in place;
- plugging of floor drains and pipe penetrations with cementitious patch products to prevent groundwater infiltration.

**AREA OF POTENTIAL EFFECTS (APE)**

Since this element of the rehabilitation proposal is limited to the basement interior, the APE consists of the building alone.

**BRIEF HISTORY AND DESCRIPTION**

Erected in 1954, to increase the City's capacity for electricity production, the Moran Plant heralded innovations in coal-fired power plant design by introducing new concepts and technological advances. It also subscribed to new theories in industrial architectural design – departing from previous ideals of classically inspired forms and instead embracing the visual articulation of interior function. Still, it did acknowledge the past traditions of impressive architecture for public buildings in its asymmetrical, stepped design, contrasting coping, banks of steel sash windows and a distinctive, subtly projecting, art-deco inspired surround at the public (southwest) entrance. Tall, chrome lettering on the south wall of

the highest block, the boiler room, proclaimed the building to be the "City of Burlington Electric Light Plant."

Located on the crescent-shaped Burlington Bay Lake Champlain, the Moran shares in the rich, industrial history of the city's waterfront. Since the early 1800s the area has transitioned from one of the nation's largest inland ports, predominantly for the local lumber trade, to a great rail yard in the 1850s and finally to a bulk petroleum facility which operated into the 1990s. Largely inaccessible to the public until then, the area has since been transformed into a significant cultural and recreational resource. Industrial buildings, debris, rail yards and lines have been replaced by open, public spaces, high-end condominiums, restaurants, a museum, marina, ferry docks, public park and more – attracting local citizens as well as visitors. The Moran is one of few extant historic industrial buildings on the Bay (including a c.1880 shavings house, an earlier, c.1905 electric light station, and c.1910 filtration plant) which form a small cluster slightly northwest of what is now Waterfront Park.

In 1951 the city's electric and water departments jointly purchased a 113,645 square-foot parcel north of their existing waterfront facilities from the Central Vermont Railway for the purpose of erecting a new electricity generating station. Despite delays caused by contractor disputes, steel shortages and worker strikes, the plant was completed in 1954 and the first turbine set in motion in June of that year. It wasn't fully completed, however, until the following year – coincidentally the BED's Golden Anniversary year.

When it went online, the Moran, named so for former Burlington Mayor J. Edward Moran who had been a staunch proponent of the venture, presented an efficiency and capacity previously unseen. Ownership of the plant and power distribution were part of a complex regional network of power companies – including Green Mountain Power, which leased the Moran. It is important to note that the Moran did not provide all the power required by the city – but was instead just one of a number of sources, several imported, in a system that aimed to provide a continuous and reliable source of electricity. This was important to Burlington, where electric heat debuted in 1957. Even so, fluctuations in service occurred occasionally when power generated in excess of the city's needs was transferred to other members of the network. In the mid 1960s the Moran was supplying 30% of the city's electric needs, and the amount of coal being burned in the process was significant: in a six month period between January and June 1969, the plant consumed 19,159 tons of coal.

Consequently, pollution became an increasing concern. In 1969 an attempt to clean the plant and make its surroundings more aesthetically pleasing consisted of seeding adjacent lawns, planting of flowering bushes, and painting and sandblasting of the masonry to rid it of the black debris associated with coal burning. Green Mountain Power's lease of the plant ended that same year and the city embarked on a comprehensive overhaul to combat pollution and the steep cost associated with the system. In 1977 the BED succeeded in an experimental conversion of one firing unit to a system fed by a wood-chip- and-heating-oil mixture – which reduced reliance on fossil fuels, expenses on raw materials and cost of power generated. Considered groundbreaking, the conversion garnered international attention and was followed by a second conversion in 1979.

The phenomenal success of this conversion eventually led to the construction of the wood-fired Joseph McNeil Generating Station in Burlington's Intervale district in 1982. The Moran continued to supplement the regional power pool when the McNeil station went online in June of 1984 – but within two years, it was decommissioned, stripped of its stacks, machinery and systems and, essentially, abandoned.

Ownership of the Moran was transferred from BED to the City of Burlington in 1990. Deceptively utilitarian and simple in form, the building is comprised of several distinct, stepped, flat roof units, embellished with subtle detailing. Set in a common bond with seventh course headers and contrasting coping consisting of a single, soldier course, each brick block had a distinct function: one housed service facilities; another the turbine room; and the highest, equivalent to roughly six-stories in height, housed the coal conveyor, hoppers and boilers. On the exterior, a steel conveyor fed coal from storage areas into the conveyor room. Intake and outtake sluiceways allowed for lake water to enter and exit the sub-basement chambers as part of a natural cooling process for the power generating machinery.

The exterior conveyor, along with the stacks, boilers and turbines was removed after decommissioning. The sluiceways, located on the westerly side of the building, were left open – which resulted in a constant flow of water into the basement – especially during times of high lake levels. Although sluiceway dams were constructed in 2009 to permanently separate the building from the lake, partly to avoid any potential contaminants in the building from entering the lake, the basement was left in its flooded state. Currently there is a significant amount of standing water in the basement, the floor level of which is at the same height as the average lake level.

The building has remained largely vacant since decommissioning, save for a small area at the southwest corner utilized until recently by the Lake Champlain Community Sailing Center.

**SIGNIFICANCE & INTEGRITY**

The Moran Plant is significant under both Criteria A and C: A, for its associations with the evolution of power-generating stations; and C, for its architecture - which is distinctive for its type, period and method of construction. Character-defining features on the exterior include its stepped design and setting on Lake Champlain, its public entrance delineation, large expanses of taut, solid walls, banks of steel-sash windows, the remnants of the exterior steel superstructure on the north, and the sluiceways on the west. On the interior, significant features include the large expanses of open space, steel structural skeleton, and remaining interior finishes in the former administrative block. Although its stacks, boilers, fuel delivery systems and interior fixtures were removed after decommissioning, and several windows and other features have been lost due to decay or vandalism, the building is clearly still able to convey its former function and associations. The property retains a high degree of integrity of location, materials, feeling and association for the period from 1954, the year of its construction, to 1977, the year of the groundbreaking conversion from a coal-burning to wood-firing system. Where activities contributing to significance have been ongoing, current protocol is to close the period of significance 5o years prior to the date of evaluation – which in this case would be 1960. However, the experimental and successful conversion of the plant rises to the level of exceptional importance and thus allows for the period to extend. Integrity of setting and design have been diminished slightly by the changes incurred in the decommissioning, however these do not detract from the property's eligibility for listing in the National Register of Historic Places.

**HISTORIC PROPERTIES IN THE AREA OF POTENTIAL EFFECT**

The Moran Plant is the only historic property in the APE for the basement component of this project.

**DETERMINATION OF EFFECT**

The proposed changes to the basement level of the Moran Plant will not alter any character defining features in such a way as to compromise integrity or render the property ineligible for listing in the National Register of Historic Places. In addition, staff at the Vermont Agency for Community Development, responsible for administering state and federal tax credit programs, have indicated their confidence that the proposal to clean, fill and encapsulate the basement of the Moran Plant will meet the Secretary of the Interior's Standards. Therefore, this element of the rehabilitation is deemed to have no adverse effect on historic properties within the APE.

**SOURCES**

New England Preservation Collaborative, Inc. "Assessment of Historic Generating Facilities on the Burlington Waterfront." Report prepared for the City of Burlington, 2006.

Williams, Rebecca. "Burlington Electric Department: The First One Hundred Years 1905-2005." Report prepared for the Burlington Electric Department, 2005.

Sanborn Map and Publishing Company. Fire insurance maps for Burlington, Vermont: 1885, 1889, 1894, 1900, 1906, 1912, 1919, 1926, 1942, 1942 rev. to 1950