

## Duffy Engineering & Associates Inc.

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1 - 22 -13

Dan Andersen  
dj Andersen, LLC  
3540 Montgomerie Ave  
Deephaven, MN 55391

Re: Fourth Structural Inspection of  
Old N. S. P. Power Plant  
380 Randolph Road  
St. Paul, MN

Mr. Andersen:

At your request, I made an inspection on the 17<sup>th</sup> on January at the above property to inspect the building from ground floor to the roof. Per our conversation, and your concerns over the buildings overall structural integrity, I feel this structure is not safe in its present condition. I made a full inspection of the building and at this time, per my findings, I recommend that no additional cleanup or material removal be undertaken. I also do not recommend any entry into the building do to safety concerns.

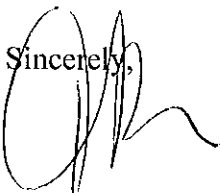
I looked at the exterior masonry / brick walls from ground floor to the roof. The walls of the equipment unloading bay with the overhead crane looked to be very solid from the inside. I did notice that the exterior brick veneer and accent blocks of this area are falling off the exterior which is allowing water / frost deterioration of the load bearing interior widths of the brick. I then looked at the walls framing the taller main plant. The exterior brick veneer and accent blocks on this area are in even worse shape than the unloading area. I noticed a number of vertical cracks in these masonry / brick walls which run almost from the floor up to the roof which is over 90 feet tall. There are also cracks off the corners of some of the windows. These exterior walls also show signs of lateral bulges. The only structural items which brace these tall walls are the beams and lateral braces which run from the interior vertical columns to the exterior walls. These beams supported much of the equipment / platforms which have been removed. These same walls have numerous large openings and windows (see enclosed pictures). These cracks are most likely due to slight settlement or movement of the walls over the past 90 years and the lack of maintenance to keep water and frost deterioration to the brick. A cursory analysis shows that these 90' tall brick walls do not meet any of the parameters for a safe structural condition based on today's code requirements.

I then inspected the brick walls and steel structure which support the roof top water tank. There is a room which extends above the main roof of the facility and is adjacent to the water tank. The walls of this room are made of multi-width brick. The walls are separating from each other and have numerous cracks in the corners (see enclosed pictures). I would estimate this water tank has a capacity of 15,000 to 20,000 gals and is over 100' off the ground and above the main roof of the building. Its supported off four steel legs which are bolted down to the exterior brick walls and or the main roof steel. I discovered the brick walls directly under these legs are deteriorated and much of the brick is loose. The large steel chimney is supported by the interior steel columns which are braced by the exterior brick walls. This poses a serious safety concern since the chimney serves no present or future purpose. Regardless of what the building may be used for in the future, this chimney should be removed. I'm not sure if this chimney can be removed save for the total demolition of the building.

I found that the roof has many soft spots and holes which allow for serious water penetration to all the interior areas of the building and down the walls. This continuous water penetration only accelerates the deterioration of the mortar between the brick them selves and the overall structural integrity of the walls.

Due to the poor condition of the brick walls and supports of the water tank, I would recommend that the water tower be removed as soon as possible before it has a chance to topple into the main roof. The removal of the water tank should be done with a crane rather than cutting it into small pieces in place since this might make the tank unstable and cause it to fall.

It is my opinion that the building structure is fairly unstable in its present condition and advanced deterioration of the brick walls. This poses a serious life safety concern for any vagrants and or city staff entering the building. If an immediate conversion / repair of the building is not undertaken within the next year or two, I feel the structure cannot be saved and should be demolished.

Sincerely,  


Terry W. Duffy P.E.  
President