Additional Review by Yong-Yi Wang

1. Reference No. 2 is at the wrong place. The tensile strain capacity equations of CSA Z662 were developed before the publication of reference No. 2. In addition the internal pressure effects were fully included in reference No. 2. Please revise throughout the paper as appropriate.
2. A list of references on the effects of internal pressure can be more appropriately included after “Further research of Wang et al with full scale pipes having …” Please revise throughout the paper as appropriate.

Wang, Y.-Y., Liu, M., Zhang, F., Horsley, D., and Nanney, S., 2012, “Multi-tier tensile strain design models for strain-based design Part I - fundamental basis,” Proceedings of the 9th International Pipeline Conference, Calgary, Alberta, Canada, September 24-28.

Liu, M., Wang, Y.-Y., Song, Y., Horsley, D., and Nanney, S., 2012, “Multi-tier Tensile Strain Models for Strain-Based Design Part II - Development and Formulation of Tensile Strain Capacity Models,” Proceedings of the 9th International Pipeline Conference, Calgary, Alberta, Canada, September 24-28.

Liu, M., Wang, Y.-Y., Horsley, D., and Nanney, S., 2012, “Multi-tier tensile strain design models for strain-based design Part III - model evaluation against experimental data,” Proceedings of the 2012 9th International Pipeline Conference, Calgary, Alberta, Canada, September 24-28.

Wang, Y.-Y. and Liu, M., “Status and Applications of Tensile Strain Capacity Models,, Proceedings of the 6th Pipeline Technology Conference, Ostend, Belgium, October 7-9, 2013.

Wang, Y.-Y., Liu, M., and Song, Y., 2011, “Second Generation Models for Strain-Based Design,” US DOT Contract No. DTPH56-06-T000014, final report, http://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=201.

1. Extensive work on the design of full-scale tests was done as a part of the work of Reference No. 2. The appropriate reference is

Wang, Y.-Y., Liu, M., Long, X., Stephens, M., Petersen, R., and Gordon, R., 2011, "Validation & Documentation of Tensile Strain Limit Design Models for Pipelines,” US DOT Contract No. DTPH56-06-T000014, final report, <http://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=200>.

Please revise throughout the paper as appropriate.

1. Table 1 is split to two pages. Text should be moved around so the table would stay on a single page.
2. Page 2, last paragraph. “A total of 8 full scale experiments will be carried out.” It may be more appropriate to change to “A total of 8 full-scale experimental tests are planned. Two of the tests are covered in this paper.”
3. Figure 3. The y-axis can’t be “yield stress”. Yield strength is a single value, not a curve. I suspect it should be “true stress” in ABAQUS term.
4. Consistent use of numbers and unit. There should be a space between the numbers and their unit. In the text, there is no space between the numbers and units in most cases, but a space is there in some cases. Please also be consistent in using MPa, MPA, or Mpa. Similar about ksi, et al.
5. Please be consistent in using “Finite element” or “finite element”.
6. Figure 18, (optional consideration). On Figure 18(b), there appears a large dip in applied force at CMOD slightly above 0.5 mm. What is the cause of it?
7. (Optional) The lines in figures 19 and 20 are barely readable.
8. Second paragraph in DISCUSSION AND CONCLUSIONS. Corrections are strongly encouraged.
   1. “These equations are not applicable to pipes with steel grade X52.” This statement is not true. The CSA equations have no explicit parameter related to material strength. It is not necessary to test every grade, depending on if the grade is a controlling parameter. We use ECA procedures tested to X70 and lower grades for X100 pipes.
   2. “This paper addresses the current knowledge gap in the prediction of tensile strain capacity of X52 pipes in the presence of internal pressure.” The internal pressure effects have been addressed in references cited in No. 2 of this list. Again tensile strain capacity equations in this work (references of No. 2) do not have an explicit strength parameter. The work on X52 does add to the knowledge base, but there is no fundamental limit on grades in the work already published.
9. (Optional) In CSA Z662 equations, the effects of internal pressure were “considered implicitly” by setting a hard limit on the apparent toughness. The CSA equations have been shown to be conservative even compared with test results with internal pressure. This is very important in real-world applications.