



NorthernStar Natural Gas INC.

LNG Interagency Working Group
March 15, 2007

Clearwater Port LLC



Capacity of 1.2 - 1.4
BCF/day



Landfall at Mandalay Power Station



Platform Grace



RECENT DEVELOPMENTS

- Platform Inspection Completed
- ABS Nominated as CVA to MMS
- Solicitation for EIR/EIS & Risk Assessment Contractors (two RFPs)



- The platform was damaged during original installation when pile segments were dropped damaging several jacket braces.
- This damage was immediately surveyed; contractor developed a repair program which was implemented.
 - This program included a replacement of two damaged members and the
 - the removal of two others.
 - Several braces that experienced minor damage were left in-place and were not repaired.



✓ Investments in Platform Structural Analysis

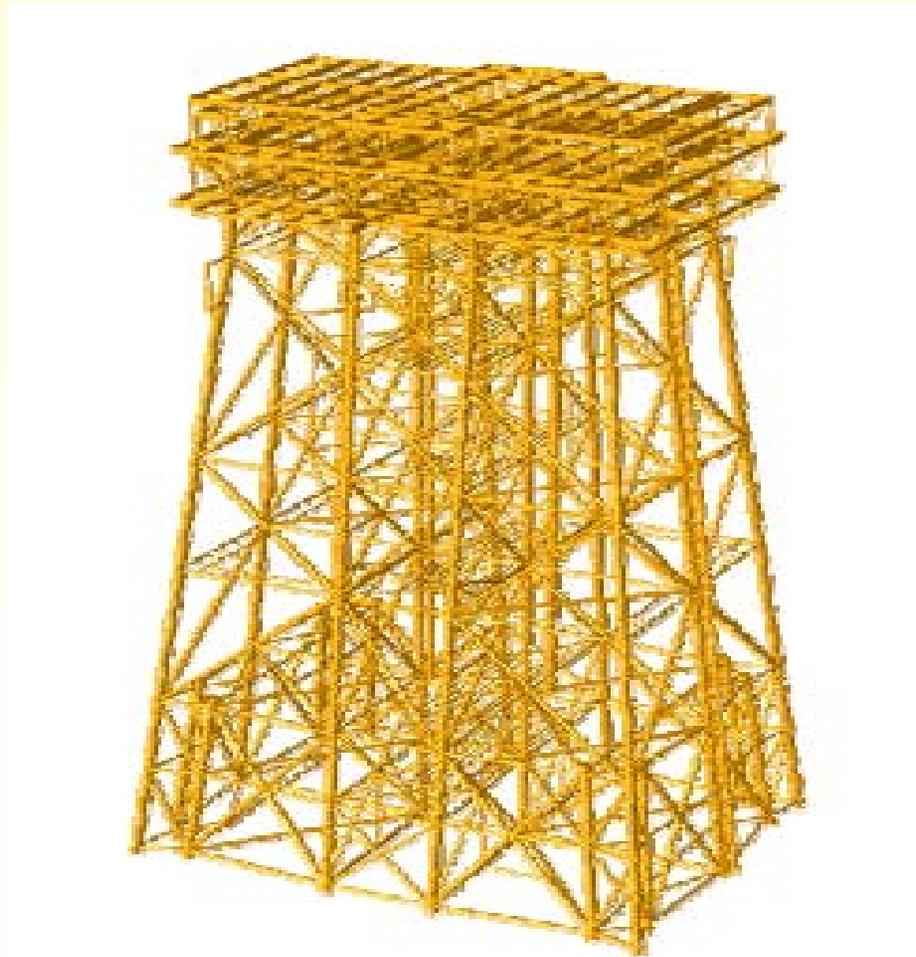
- M&H / MMI are conducting platform structural analysis
- Systematic approach follows API RP 2A requirements providing comprehensive analyses

– **Phase 1**

- Compile data, develop model -
- Detailed analysis/computer modeling of strength, seismic, storm wave, fatigue -
- Develop inspection plan –

Phase 2

- Inspection – visual, NDE, material samples -
- Integrate inspection data with analysis -
- Develop strengthening plans and remedial measures –





- The recent assessment has accounted for the jacket members that were replaced, removed or were damaged and not repaired.
- The analysis assumed a “worst case” assessment of these non-repaired members and assumed no structural support to the platform,
- While including the loads these damaged members placed on the structure, and demonstrated there is no significant loss of structural integrity.
- 7 visuals were conducted,
- wall thickness gauging at 56 locations
- 74 Flood Member Detection (FMD) inspections



- **Overall platform is in excellent condition and will comply with the requirements of API RP2A for the reuse as a LNG Regasification terminal**
- **No Unexpected or Unexplainable Damage or Anomalies were Observed Encountered**
- **No Corrosion Problems Observed**
 - All wall thickness measurements (429 total) are all within the allowable manufacturing tolerances for the line pipe under API 5L. For all 56 locations observed, the minimum average wall thickness observed is 98% of the specified wall thickness. For 42 locations, the average wall thicknesses observed exceeds the specified wall thickness.
- **2 Flooded Members Detected (non-critical members)**
 - One flooded member located at (-) 93' depth was repaired (replaced by underwater wet welding) after installation and is in place solely for support of the conductor bay framing, providing no benefit to the integrity of the platform. No further action is anticipated on this member.
 - The second is a secondary horizontal at the (-) 155' depth, which was also damaged during the original installation and left as is. Structural analyses show this member is not necessary for the integrity of the structure.
 - NDE was performed on each member end which confirmed there are no cracks at the member ends that could propagate into the leg.

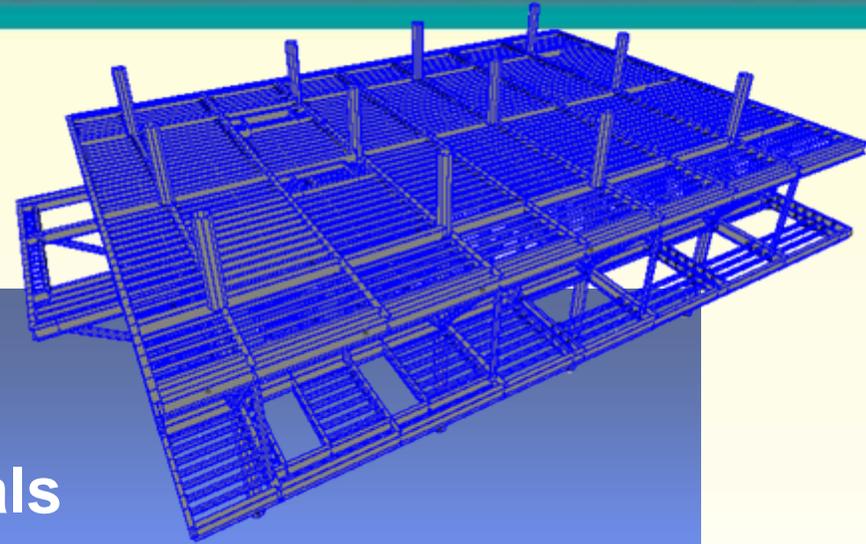


- **FMD was performed on the other members which were damaged and left as is during the original installation. All other damaged members are void of water (dry).**
- **No significant anomalies or cracks found with NDE, however two weak indications are noted.**
 - One is located on a conductor bay perimeter member, and is not integral to the integrity of the structure, however reinforcement of this joint is included in the upgrade plan. FMD was performed on this member and it is dry.
 - The other on a circumferential weld on a leg. Analysis shows the fatigue loading on this joint to be very low, and the annular space in this leg will be grouted providing additional reinforcement.



- ✓ **Platform will be Recertified to Current Standards**
- ✓ **Nominated ABS Shipping to serve as Certified Verification Agent (CVA) under MMS**
- ✓ **Serve as Certified Engineer (CE) under US Coast Guard Deepwater Port Act**

Source: As outlined by USCG letter to Crystal Energy dated May 12, 2005



- New topside structural members to be constructed with cryogenic rated materials
- Two deck design minimizes weight
- Offsite fabrication, minimizing site specific construction time
- Allows for optimized layout of process facilities



- Ecology and Environment will be the EIS/EIR Contractor
- Selection made by USCG and CSLC
- Independent Risk Assessment (IRA) Contractor selection in a few days
- IRA will be integrated with final EIS/EIR

