Experience

3.9 System Safety Engineering Support

InDyne

Services Experience:

ETTC Contract: InDyne provides system safety engineering support for every task asked to design, analyze, construct, and operate. For mechanical projects, InDyne uses SolidWorks modeling software to develop a concept design, take it through structural, stress, strain and temperature analysis to ensure at least a 1.5 factor of safety is achieved before going into the final stages of design and eventual construction.

ESSV Contract: InDyne provides system safety engineering support for every task asked to design, analyze, construct, and operate. For mechanical projects, InDyne uses modeling software called SolidWorks to develop a concept design, take it through structural, stress, strain and temperature analysis to ensure at least a 1.5 factor of safety is achieved before going into the final stages of design and eventual construction. From an electrical standpoint, InDyne incorporates National Electrical Code and NFPA 780 current standards into our current designs and use a minimum 2.5 factor of safety. InDyne's Safety, Environmental and Occupational Health employees perform job hazard analyses before operation or use these systems to maintain our excellent safety record which is demonstrated in our 2011 Experience Modification Rate of 0.81; 29% below the industry average.

POC: Ed Scarborough (Phone) 321-868-0543

All Points Logistics

Services Experience:

APL's ESTS team, working in propulsion, performs Lift-Off Debris Analysis combined with CFD. Within the Liftoff Debris team, our main priority was ensuring the safe flight of the Space Shuttle from a debris perspective. Accomplishing this goal revolves around identifying and assessing risks to the Vehicle and then mitigating or eliminating those risks if possible. While simple in statement, the actual execution of this process is significantly complicated by the realities of the launch environment, vehicle operations, and the framework in which they exist. APL won several continuous improvement awards, including the John P. Hartin (contract wide top achievement), for our innovations in Safety Engineering Support. For example, we created a set of post-processing tools for Liftoff Debris Transport Analysis (Lodta), which enabled the visualization of analysis data in concise forms. In addition, we are an indispensable member of the Propulsion Fluids and computational fluid dynamics CFD team. APL's support the Space Shuttle Missions, included travel to Kennedy Space Center after each launch for post flight inspection and review of lift-off debris video to assess performance, anomaly

All Points Logistics (cont)

detection, and final launch reporting. We supported four Shuttle launches with on-console efforts, launch pad walk-downs, and post-launch data review, including leadership of debris team engineering efforts at KSC during FY10. We performed detailed Lift-off Debris CFD analysis, which involves testing of the two-phase model being developed for the in-house CFD code, worked with the developers to trouble shoot problems and issues, and produced deliverables documenting all of his effort.

POC: Rian Powell (Phone) 256-963-0100

MEI Technologies

Services Experience:

DHEP Contract: MEIT has 20 years of experience in ensuring system safety via DHEP and its predecessor contracts. We do this for systems that are deployed at major national resources (Shuttle and ISS and involving the nation's corpse of astronauts.

POC: Mr. Norbie Juist (Phone) 281-823-6216