Senior Design Project Description for FALL 2015
Project Title: Intercooler Turbocharger Removal (IMG_COOL)

Supporter: IMG Midstream

Supporter Technical Representative: ASSIGNED

Faculty Mentor: ___X___ ASSIGNED _____ TBD (check one)

Single Team _____ Dual Team ___x___ (check one)

Personnel (EN/ET): _____ E, _____ Cp, _____ Cv, ___5___ M, _____ SE (Each team)

(Complete if the number of students required is known)

Expected person-hours: (250 per student)

Description of Project:

IMG Midstream is a small private power company that is developing green field facilities to generate a maximum of 20 MW at each facility. The first IMG Midstream facility just started commercial operation. These facilities that use the GE Jenbacher J624 internal combustion engine operating on natural gas. Each facility is comprised of 5 engines. To improve performance each engine is provided with turbochargers. There currently is no method of removing the intercoolers for maintenance or replacement. The purpose of this project is to design and fabricate a prototype device for removal and replacement of the intercoolers.

Initial Project Requirements (e.g. weight, size, etc.):

The device is to be capable of the safe removal and replacement of the intercoolers. The removal device is to be powered. The choice of power is to be determined by the project team. IMG will provide equipment and plant layout drawings at the start of the project. There is compressed air and 120V power available for use. The device must be floor mounted.

Drawings, pictures, and a generic description of the removal of the intercoolers will be provided at the start of the project.

The device is to be capable of the following:

1. Require no more than two people to operate.
2. Require no more than 8 hours to remove or install an intercooler.
3. Portable – capable of being moved from one engine to another.
4. Be capable of being disassembled for shipment to IMG Midstream.

Expected Deliverables/Results:

A completely functional and operational prototype shall be provided. It shall be provided with a complete user manual, including disassembly and assembly instructions. The procedure shall include a description of the piping that must be removed to gain access to the intercooler.

List here any specific skills or knowledge needed or suggested (If none please state none):

None