PEA Job Description

1. Position Identification

<table>
<thead>
<tr>
<th>Position Number</th>
<th>992206, 992209, 992130</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position Title:</td>
<td>Junior Project Engineer</td>
</tr>
<tr>
<td>Department:</td>
<td>Ocean Networks Canada</td>
</tr>
<tr>
<td>Reports to:</td>
<td>Testing &amp; Development or Field Services Manager</td>
</tr>
<tr>
<td>Number of Direct/Indirect Reports</td>
<td>Direct__0____ Indirect__0___</td>
</tr>
<tr>
<td>Classification Level</td>
<td>SG 7</td>
</tr>
<tr>
<td>Last Updated</td>
<td>October/2017</td>
</tr>
</tbody>
</table>

2. Position Summary

Ocean Networks Canada (ONC) is a world-leading organization supporting ocean discovery and technological innovation. ONC is as a not-for-profit society that operates and manages innovative cabled observatories on behalf of the University of Victoria that supply continuous power and Internet connectivity to various scientific instruments located in coastal, deep-ocean, and Arctic environments. ONC's cable arrays host hundreds of sensors distributed in, on and above the seabed along with mobile and land based assets strategically located, instruments that address key scientific and policy issues (subsea earthquakes and tsunamis, ocean acidification, marine biodiversity, etc.) within a wide range of environments.

ONC's Observatory Operations' division is mandated to provide a reliable and relevant digital, coastal and sub-sea infrastructure that facilitates the goals of the observatory user communities. Marine Operations supports this mandate through the installation, maintenance and repair of the cabled arrays, mobile systems and land-based assets that comprise the coastal sub-sea infrastructure. In this regard, Marine Operations utilizes a team-based, client-focused approach that promotes a safe work environment and fosters an environment of mutual respect, cooperation and support. Together the Field Services, Testing & Development and Operations Support units within Marine Operations, work to efficiently, effectively and safely fulfill their core purpose. The Marine Technology Centre (MTC) in Sidney serves as the department's base of operations.

The Junior Project Engineer will work in either the Testing and Development (T&D) unit, or the Field Services unit. The T&D unit is primarily responsible for testing and qualifying instruments and equipment prior to deployment to the cabled observatories and other mobile and land based assets. The Team designs and develops instruments and equipment, repairs and maintains instruments, and supports the planning and execution of field operations related to the observatory maintenance. The Field Services unit is primarily responsible for preparing for and executing field service operations related to the day-to-day workings of the cabled observatories and other mobile and land based assets. Both units participate in ship based activities that occur multiple times a year for up to four weeks duration, as well as day and multi day trips to service land and marine systems.

The Junior Project Engineer participates in observatory maintenance, instrument testing and maintenance activities, maintenance of the laboratory testing facility, equipment design and development, and documentation of instruments, equipment, and related procedures. This position is expected to maintain certifications in forklift and crane operation safe practices, first aid, and a Transport Canada approved marine safety course such as Standards of Training, Certifications and Watchkeeping - 95 Basic Safety, MED-A3 or other.
This position, as with all Marine Operations positions, will on a rotating basis serve as the Marine Operations Safety Coordinator whose role it is to coordinate internal tasks required to ensure safety equipment, training and records are in place to meet Marine Operations workplace safety requirements. The Safety Coordinator sits on the ONC Joint Local Safety Committee.

### 3. Key Responsibilities and Expectations

<table>
<thead>
<tr>
<th>Key Responsibilities</th>
<th>Expectations:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Observatory Maintenance: (40%)</strong></td>
<td>- Test and qualify scientific instruments and equipment to be integrated into ONC observatories according to established standards and protocols</td>
</tr>
<tr>
<td></td>
<td>- Create test reports according to instrument qualification processes and procedures</td>
</tr>
<tr>
<td></td>
<td>- Prepare and stage qualified instruments for observatory deployments.</td>
</tr>
<tr>
<td></td>
<td>- Repair, maintain, clean and requalify marine instruments and related equipment according to established practices and standards</td>
</tr>
<tr>
<td></td>
<td>- Troubleshoot/debug instrument errors and execute or coordinate the necessary repair work, whether in house or external.</td>
</tr>
<tr>
<td></td>
<td>- Provide technical support on shore or at sea during observatory maintenance cruises as required, including deck operations, handling of heavy items, preparing instruments, deployment and recovery procedures etc.</td>
</tr>
<tr>
<td></td>
<td>- Participate in field work to assist with installation of infrastructure</td>
</tr>
<tr>
<td></td>
<td>- Manage vendors, suppliers and external contractors to ensure projects are completed on time and according to ONC requirement</td>
</tr>
<tr>
<td></td>
<td>- Complete other related duties as assigned</td>
</tr>
</tbody>
</table>

| Equipment Design and Development: (30%)      | - Create/maintain up-to-date testing documentation for marine instruments   |
|                                             | - Create design documentation for equipment and cables using standard ONC templates |
|                                             | - Assist in the design, fabrication and oversight of the manufacturing of equipment, platforms and structures under the supervision of senior staff. |
|                                             | - Perform, for review and approval, engineering analyses to support design decisions with regards to mechanical, electrical, electronic, thermal, or computer / software systems. |
|                                             | - Update workflow documents to ensure that operation schedules are maintained |
|                                             | - Build and test marine cable assemblies for instruments and equipment.     |
Facilities Operations: (20%)

- Ensure all facilities are maintained at a high operational standard and represents a clean, healthy and safe working environment
- Assist with shipping and receiving duties for laboratory equipment.
- Ensure equipment and instruments are properly stored and inventoried.
- Collaborate in the identification and development/improvement of work procedures with the aim of streamlining workflows within the marine operations team.

Consultation with other ONC staff and external parties: (10%)

- Communicate with vendors and equipment providers as required to confirm technical specifications for scientific instruments
- Support Digital Infrastructure staff in charge of software development, instrument communications and testing by setting up and connecting instruments on an agreed upon schedule
- Work collaboratively with the Field Services, T&D and Operations Support team members as required to move projects forward to completion. This requires the development of effective working relationships with team members, and cross training so specialized knowledge can shared between teams

4. Classification Factors:

Problem-Solving:

This position contributes innovative and pragmatic ideas as well as their technical knowledge and experience to the design of sub-sea marine equipment. Testing and troubleshooting of operational issues requires the position to use their knowledge and experience to diagnose and analyze problems. Guidance from senior staff, established processes, protocols and instrument documentation assist the position in the completion of design, testing, maintenance, troubleshooting and repair activities.

Responsibility for Financial & Material resources:

Shared responsibility for laboratory equipment and instrument inventory. Recommends moderate purchases of laboratory equipment, supplies and materials. With approval from the budget holder, coordinates procurements and purchases relevant to his/her assigned projects.

Responsibility for Human Resources:

Direct supervision of this position will be provided by the Manager T&D, or Field Services. The Junior Project Engineer will also receive informal supervision from senior T&D, or Field Services, staff.

The Junior Project Engineer will train and oversee other ONC employees with regard to the specific hazards presented by the individual instruments particularly with regard to working with electrified equipment both at sea and at the ONC testing facility at MTC. The Junior Project Engineer will also indirectly provide direction and oversight to engineering co-op/intern employees.

Impact of Decisions and Actions:
The Junior Project Engineer will ensure that instruments are thoroughly tested and qualified to meet the appropriate criteria and functionality prior to deployment on the ONC observatories. Given tight deployment deadlines, the value of the instruments and systems, and the high costs associated with deployment and recovery operations at sea, this task is critical. The decisions and actions taken by this position directly impact both the success of the network and the reputation of ONC and ultimately UVic based on the reliability of the network.

The Junior Project Engineer will contribute to the design and manufacture of equipment, including subsea platforms, underwater housings, specialized brackets etc. Both innovative ideas and pragmatic approaches in this area are central to developing solutions that produce successful outcomes.

Independence:

This position receives informed guidance, direction and support from senior T&D or Field Services staff and Managers. Objectives are set by the person performing the work based on the direction received. When completing assignments the Junior Project Engineer works independently selecting work methods. The Junior Project Engineer will make use of all available sources in researching problems, and will base subsequent actions on the most complete information possible.

Policy, standards, best practices, as well as established processes and procedures guide decisions made by this position. The Junior Project Engineer is expected to consult senior staff when encountering unfamiliar instruments and equipment. Issues that are unusual, are of consequence to the functioning of the instrumentation, could impact the workflow schedule, or which might pose a hazard to the safety of the employees or workplace are to be escalated to senior personnel or the Manager. The senior personnel will then assist in determining the Junior Project Engineer’s subsequent actions. Tasks completed by the Junior Engineer are reviewed upon completion.

The Junior Project Engineer is expected to uphold all applicable safety regulations, policies and procedures.

5. Summary of qualifications:

The successful candidate will have a degree in engineering or applied science, and a minimum of 1-2 years of experience related to engineering in marine environments, or the equivalent combination of education, training and experience.

The candidate must either be a member of the Engineers and Geoscientists British Columbia as a Professional Engineer (PEng) or registered as an Engineer in Training (EIT), or be eligible to become a PEng or EIT and must register as a condition of employment.

Technical:
- Ability to use engineering training and experience to diagnose and analyze problems
- Experience with electronics testing equipment and tools
- Strong electronic troubleshooting and soldering skills
- Experience with PC based command, control and data acquisition
- Experience with serial communications protocols (EIA 232, 422, 485)
- Experience with computer networking, TCP/IP and UDP
- Experience with systems-level hardware integration
- Experience with mechanical and structural systems design and fabrication
- Demonstrated competence with construction hand and power tools
- Demonstrated competence with a 3D CAD package such as SolidWorks
- Documentation, diagram and technical writing skills
Other:

- Strong problem-solving abilities
- Ability to work cooperatively within a team, as well as independently
- Strong interpersonal, verbal and written communication skills
- Experience with oceanographic instrumentation and equipment including field support at sea would be an asset
- Forklift certification an asset.
- Previous maritime experience an asset.
- A current Standard First Aid or Marine Basic First Aid certificate is desirable
- A Transport Canada approved marine safety course such as Standards in Training, Certifications and MED A3 Marine Basic Safety or other would be an asset

Employee’s Signature:  
Date:

Manager's/Supervisor’s Signature  
Date: