New Generation Polar Research Vessel

Draft Feasibility Design

Comments or feedback? Visit the web-based PRV forum @ www.polar.org/prv

Operational Characteristics
- Level Icebreaking @ 3 kts – 4.5 feet (ABS A3)
- Endurance @ 12 kts – 80 days/20,000 miles
- Total Science Complement – 50
- Independent operation in multi-year ice,
- Podded propulsion provides added maneuverability without rudders
- Diesel exhaust emissions reduced by 90% compared to existing research vessels

Science Characteristics
- Bottom mapping during icebreaking
- Box keel sized for enhanced acoustic arrays
- Clear view aft from starboard pilot house
- Enhanced equipment towing in ice
- Flexible container and van arrangements
- Geotechnical drilling capability
- Helicopter complex
- Inter-deck science/cargo elevator
- Long coring capability
- Moon pool for AUV/ROV, CTD, diving, drilling and OBS deployment
- Uninterrupted sea water intake during icebreaking

Conceptual Enhancements
- 50% increase in design service life of vessel
- 32% increase in accommodations for scientists & technicians
- 50% increase in ice-breaking capability
- 62% increase in displacement
- 79% shaft power increase
- 128% lab space increase
- 33% longer endurance

Design & Construction Timeline

Raytheon
Polar Services

• R/V Nathaniel B. Palmer

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- **MOA signed between NSF and MARAD Feb 2003**
- **Feasibility design studies complete Aug 2004**
- **Technical spec. and contract terms and conditions complete Apr 2007**
- **RFP received Apr 2008**
- **Start contract design by shipyard Jan 2009**
- **Contract award Dec 2008**
- **Start vessel construction Dec 2009**
- **Vessel delivered, transit south Dec 2011**
- **PRV ready for science operations May 2012**

- **Studies, design & specifications phase**
- **Procurement, construction and delivery (transit south)**