SUMMARY FINAL REPORT

NSRP PP24-09 "BODY COOLING TECHNOLOGY STUDY FOR SHIPYARD WORKER SAFETY AND PERFORMANCE"

AGREEMENT #2018-453

Date: October 10, 2025

Project Introduction:

Problem Statement: Shipyard workers performing labor in hot, sunny, high humidity environments are subject to fatigue and heat stress, which impact performance and pose health risks. Studies show that heat exhaustion can cost $10,000-$50,000 per medical incident. Legacy safety precautions of drinking more water and taking breaks have not taken advantage of recent technology developments. Although some body cooling clothes are commercially available, they are not widely tested, accepted or implemented throughout shipyards.

Project Objectives:

- Explore commercially available or high TRL developmental body cooling technologies
- Pilot test several options and assess key parameters for ergonomics, comfort and health safety
- Report on each parameter and overall effectiveness and affordability and make recommendations
- Draft concepts for implementation plan and costs, including possible cost share between company and employee
- Assess financial feasibility to make body cooling widely available to shipbuilders in hot environments
- Estimate risk reduction

Team: The shipyards working on this 12-month project included HII's Ingalls Shipbuilding (lead), HII's Newport News, Bath Iron Works and Pearl Harbor Naval Shipyard.

Purpose of Deliverable: This final report will summarize the results as well as lay out milestones achieved throughout the project. It is meant to tie the whole project together at an Executive Summary level and refers out to the interim deliverables for more detail on each subject.

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Problem Statement

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We conducted the project following specific process steps, which will unfold in this report. The purpose of each step is to gather the best information to feed the next step. It also allows us to deliver interim products throughout the projects which helps set the pace better to help schedule adherence.

Stakeholder Analysis

The purpose of this project step and the reported outcome is to solicit, gather, and analyze input from stakeholders who would be the end-users of a successful technology and the teams who would benefit in a related way, such as reduction in the number of heat-related incidents and cost and risk reduction to shipyard organizations overall. This helps to feed the selection of garments and creation of test plans for this project. Using the rigor of a Systems Engineering Stakeholder Analysis (SHA) process, this will help ensure we have all the knowledge to best set up the remaining tasks.

The stakeholder analysis process included:

- Development of the stakeholder questions by trying to understand fundamental scenarios that drive the needs, what has been tried before, and how this might impact our choices for garment

selection. The questions were built around three categories of questions (safety, operations, prior use), plus an open category to capture any voluntary info.

- We wanted input from multiple groups including the end users in Operations and Maintenance (O&M), especially Hull and Paint teams, but also the Environmental Health & Safety (EH&S) teams, Research & Development (R&D), Human Resources (HR), Labor Relations and others who have key knowledge to guide our study.
- Interviewers performed primarily face-to-face meetings with the 28 participants; meetings were scheduled for 30 minutes but sometimes lasted longer.
- Interviewers then digitized the responses into spreadsheet format, with the question numbers, response numbers and interviewee code name for each row. This allowed us to gather all responses in one worksheet, then sort by question to condense 300 rows of data into a readable report that captures the overall feedback, or specific examples, by bullet.

Some of the key takeaways from the SHA included:

- We received a good number of responses (28; half from O&M and half from supporting organizations like R&D, EH&S, HR, Labor Relations).
- There are multiple work scenarios that are needed for cooling garments. The environment may be hot due to hot ambient air, being in a ship near a heat-producing machinery, or walking on hot metal plates as the in-progress ship compartments sit in the hot summer sun.
- Control of moisture production is key for several scenarios.
- Fire-resistant/flame-retardant fabrics are going to be essential in most cases since the hottest environments often involve hot work, blasting and painting. The cooling activity needs to last for an entire 8-hour shift, if possible.
- Wearability and durability are essential.
- Something that can be comfortably worn, fits near the body and can be used when entering small spaces is desirable. It was not resolved whether the company or the worker would own and maintain the garment, so we should consider both options. Most workers don't want to wear a used shirt, regardless of how it was laundered. It should be comfortable and washable and be durable through a large number of uses.

Market Survey

One of the most important outcomes of the SHA is that we were able to bound the problem statement to test garments suitable for three work scenarios, although others were identified. These clarified some of the needs that would have to be addressed by garments. As we performed the next step in the Market Survey, we were able to focus on garments that would be suitable for these three test scenarios. Our goal was a productive study, not to try and capture every possible garment for every work scenario. We outlined three work scenarios (discussed in more detail in the "Test Plan" section): 1) garment worn under a jumpsuit tethered to forced air supply; 2) worn under Personal Protective Equipment (PPE) but

can't be too bulky; 3) and, multi-purpose but compatible with hard hat, steel toe, short sleeve shirt and long pants.

We started with a total material budget and explored various garments available on commercial sites such as Amazon.com and Grainger and looked at the TDA Company prototype cooling shirt. We looked under the hood at the type of materials and what their key cooling mechanisms were. This was a more rigorous technical approach than assuming results based on reviews. Figure 1 shows how some of the garments were selected based on their underlying technology and cooling mechanisms.

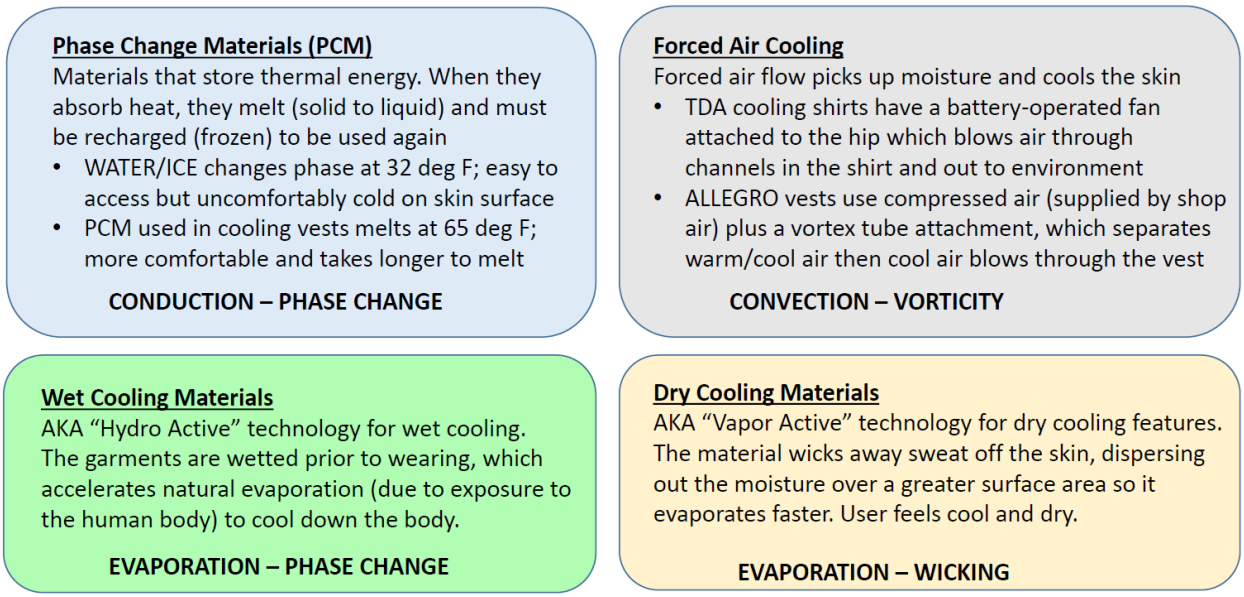

Figure 1. Test Garments were selected based on their Underlying Technology and Cooling Mechanisms.

Garment Purchasing

The market survey showed us what was available, and we then had to work to get a selection of garments in our budget. We would have fewer higher price garments and more of the lower price. Figure 2 shows what we ultimately purchased and how many were distributed across the four participating shipyards. Note, garment orders placed in summer months would sell out while we were ordering them. This is why some shirt types only went to half the testers and another shirt type went to the others. Since some ran out (stock unavailable), we tried to find equivalents but often the same make/model was not available for all test groups.

Scenario #	Test ID / Make / Model	Total # purchased
1) Under Jumpsuit w/Compressed Air	1.1 Allegro 8300 Vortex Cool vest	16
	1.2 Allegro 8450 low profile vortex cooling vest	16
2) Over Shirt or Under Jumpsuit (Full Mobility)	2.1 TDA black shirt	3 on loan (PHNSY already had one)
	2.2 GlacierTech Phase Change Material (PCM) Vest	16
	2.3 Techniche/Hyperkewl (TN/HK) Orange Evaporative Vest	16
	2.4 TN/HK Blue Ice Vest	8 (Ingalls only)
3) Multi-Purpose, Wide User Base	3.1 TN/HK Beanie (blue)	32
	3.2 Mission Beanie/Skullcap (VA - Vapor Active)	32
	3.3 Mission Beanie/Helmet liner (HA- Hydro Active)	32
	3.4 Mission Bandana	32
	3.5 TN/HK Neck Shade, Fire Resistant	32
	3.6 Ergodyne Long Sleeve Shirt in blue	23
	3.7 Mission Safety Shirt – Hydro Active (HA) yellow	30
	3.8 Mission Performance Shirt – Vapor Active (VA) Red	11 (ING+NNS)
	3.9 Arctic Cool Wicking Shirt, in white	12 (BIW+PH)

Figure 2. Test Garment Make/Model Purchased for each Test Scenario

We ended up buying over 300 garments in an order the opposite of the scenario number. Scenario 3 items were available at low cost on Amazon and could be quickly purchased using a department credit card. Scenario 2 items were available but the process of ordering took longer, and Scenario 1 items had multiple vendors which triggered a cost comparison, leading to a longer duration to receive garments. In our case, an oversight with Scenario 1 orders led to having to place the order twice. Ultimately, our tests were performed in the reverse order: Scenario 3 first, Scenario 2 next, and Scenario 1 last.

Figure 3 shows a sampling of the test article's garments purchased (in Figure 2) for each test scenario and ties it back to the underlying technology cooling mechanisms (in Figure 1). Note, we did not end up testing the respirator shown in Test Scenario 1 as shipyard safety teams did not clear them for testing.

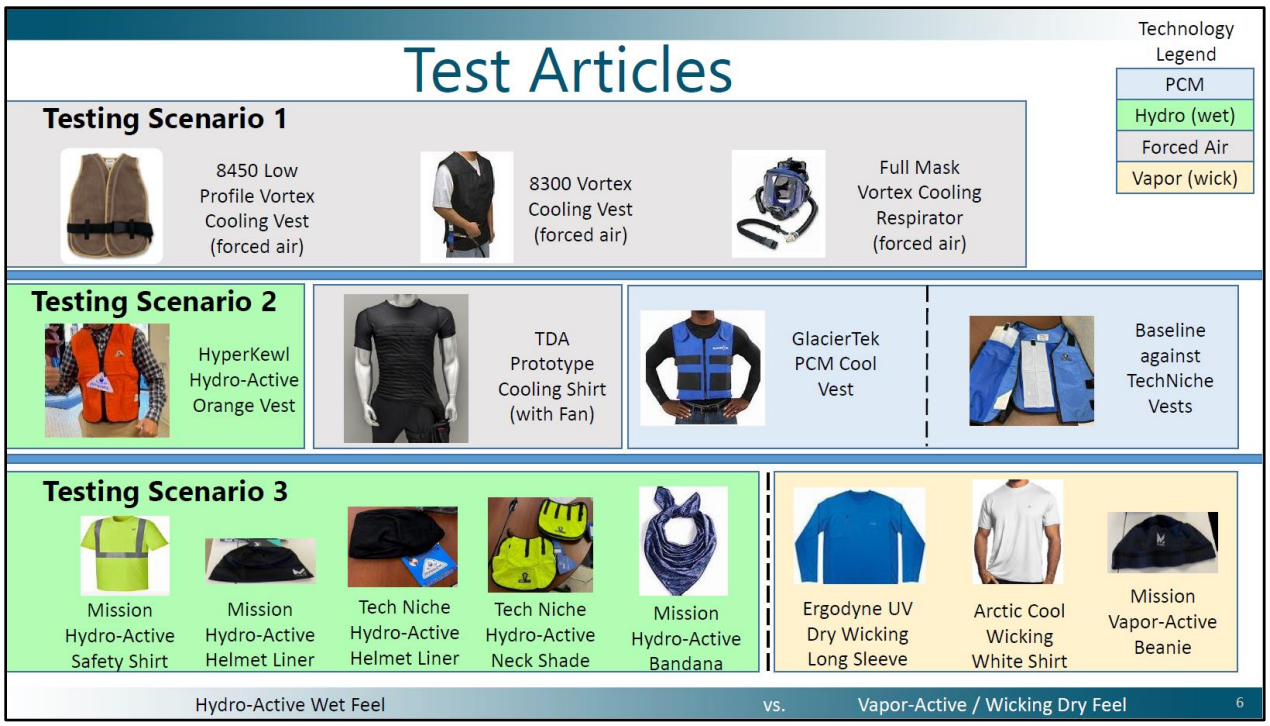

Figure 3. Sampling of Test Articles

Test Plan Development

The objective of this test plan is to evaluate and compare the performance of body cooling technologies in shipyard conditions. We will be going and testing the body cooling technology in various shipyard worker environments to evaluate what cooling technologies work best for which environments. There are 4 different shipyards that are participating in this study. Our hopes are to make the testing cycles as smooth as possible. For that reason, we are giving each shipyard the option of their test group sizes. Each shipyard can choose to either have a small test group size or a large one. The smaller test groups will have the participants rotate garments. The larger test group sizes will have each participant test out one garment or as few as possible. This will ensure all garments get tested and we are able to collect as much data as possible. Test groups will be exploring the efficacy of garments assigned to one of three work scenarios:

- Work Scenario 1
  - Cooling Method: Convective cooling via forced air removal of heat and moisture
  - They must wear a jumpsuit and hard hat and are allowed to be physically restricted by stationary connection hoses
  - Garments to be worn under jumpsuit (or under hard hat/respirator) with vortex-type connection to pressurized air, assuming air flows through the suit or hard hat

  - Assumed End-User: Workers required to wear full-body jumpsuit for processes such as painting/blasting, whose job allows work in a shop or otherwise can be tethered to a pressurized air system

- Work Scenario 2
  - Cooling Method: Conductive cooling that absorbs heat from the body in contact
  - They must wear a PPE jumpsuit and hard hat. Their gear can't be too bulky and can't be physically restricted to stationary connection hoses
  - Garments can be worn under PPE, under FR clothes, under work jumpsuit, etc. Garment must be self-powered but may require 'recharging' to keep cooling activated
  - Assumed End-User: Firefighters, HAZMAT team, craft who work on the ships and other workers that must be able to exercise mobility/ movement and keep cool under their assigned work suit

- Work Scenario 3
  - The least restrictive
  - Cooling Method: Moisture Wicking, Cool Drying, Wet Cooling, Shade/SPF
  - They must wear hard hats, steel-toed boots, a short-sleeved shirt and long pants
  - Assumed End-User: Outdoor Machinery or Electrical

Based on the receipt of the garments, it essentially turned out that Scenario 3 garments were tested first, then Scenario 2, then Scenario 1. A simple questionnaire was prepared with two parts: first, to identify the test subject, their environment, the garment they were testing and the duration. The second part was developed for the test subject to give their opinion on how well the garment performed for a variety of topics including collecting moisture, feeling wet, fitting into work attire, keeping cool for a full shift, interfering or supporting work capability, comfort, improving productivity, satisfaction with the cooling effects, ease to don and whether they personally would choose to wear the garment to enhance their work day. The questionnaire is listed at the end of the test plan deliverable and also shown here in Figure 4.

Data Collection

The data for this testing plan was collected with questionnaires. The questionnaires were handed out when participants received their garments. We let them get a feel for what kinds of questions will be asked when they are done testing the garments. That way they can be thinking about the questions as they wear the garments. Each participant in the study was asked their name, what department they work in, the location they work at where they feel they need for cooling garments and what work they do. These questions helped keep track of who participated and where the garments were being used. After testing was completed, we had participants answer the questions to help us identify what garments may be the most useful and realistic to use in the shipyards.

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Questionnaire for Body Cooling Garment Testing

Please think about these questions while you are testing the products. This questionnaire will be filled out and collected when you are done testing. If you have any questions or need to drop off the questionnaire please contact Paulina Phillips. (228) 935-6876

Demographics

1 What is your Name:
2 What is your Department:
3 What is the Body Cooling Garment you are testing?
4 Date(s):
5 Shifts Tested (AM, PM, Both)
6 What kind of work do you do?
7 What is the shipyard location of where you'll be testing?
8 Is that indoors, outdoors, in an open building, in the sun or shade, or onboard a ship
9 Was your work environment cooler, the same, or hotter than ambient outdoor air?
10 How long did you wear this garment? *(Total days and hours per day)*

Assessment

(For scale, 1 is very negative, 2 somewhat negative, 3 neutral, 4 somewhat satisfied, 5 very satisfied)

11	Did the garment condensate / collect moisture?	*Yes or No*
12	Did you feel wet while wearing the garment?	*Yes or No*
13	Did this product fit well into your work attire requirements?	*Yes or No*
14	Did the garment keep you cool for a full work shift?	*Scale 1-5*
15	Did the garment interfere with your ability to perform your work?	*Scale 1-5*
16	Did this make an improvement in your work day comfort?	*Scale 1-5*
17	Do you think the garment would fit multiple body types?	*Scale 1-5*
18	Were you satisfied with the cooling effectiveness if this garment?	*Scale 1-5*
19	Do you think the garment enhances your personal safety?	*Scale 1-5*
20	Do you think the garment enhances your job productivity?	*Scale 1-5*
21	Was the garment fast and easy to put on and remove?	*Scale 1-5*
22	If this was readily available, would you use this garment?	*Scale 1-5*

23 Do you have any general feedback or comments? Please describe below. Thank you!

Figure 4. Questionnaire for Body Cooling Garment Testing.

The volunteers were asked to report on the experience and provide responses to questions (mostly on a scale of 1 to 5), and provide feedback on the overall experience. In a one-page questionnaire, the first section documented baseline information about the user and the garment and work environment, while the second set had questions on comfort, efficacy, and benefits. Figure 2 shows the questionnaires provided to volunteer testers. Note, for data analysis, we modified Q15 into Q15.5 which reverses the question and the scores. That way all the questions would have 5 as a positive value and 1 as negative.

Testing of each scenario was scheduled for 2 months, but with some garment deliveries delayed, the total test period ran around 6 months. Most tests ran an average of 7 days, with some at 1-2 days and some 21+ days. There were a total of 1,800 man-days tested, plus two "long run" exceptions—one tester kept using item 3.4 Mission Bandana for 3 months and another tester kept using item 3.7 Mission safety shirt for 4 months.

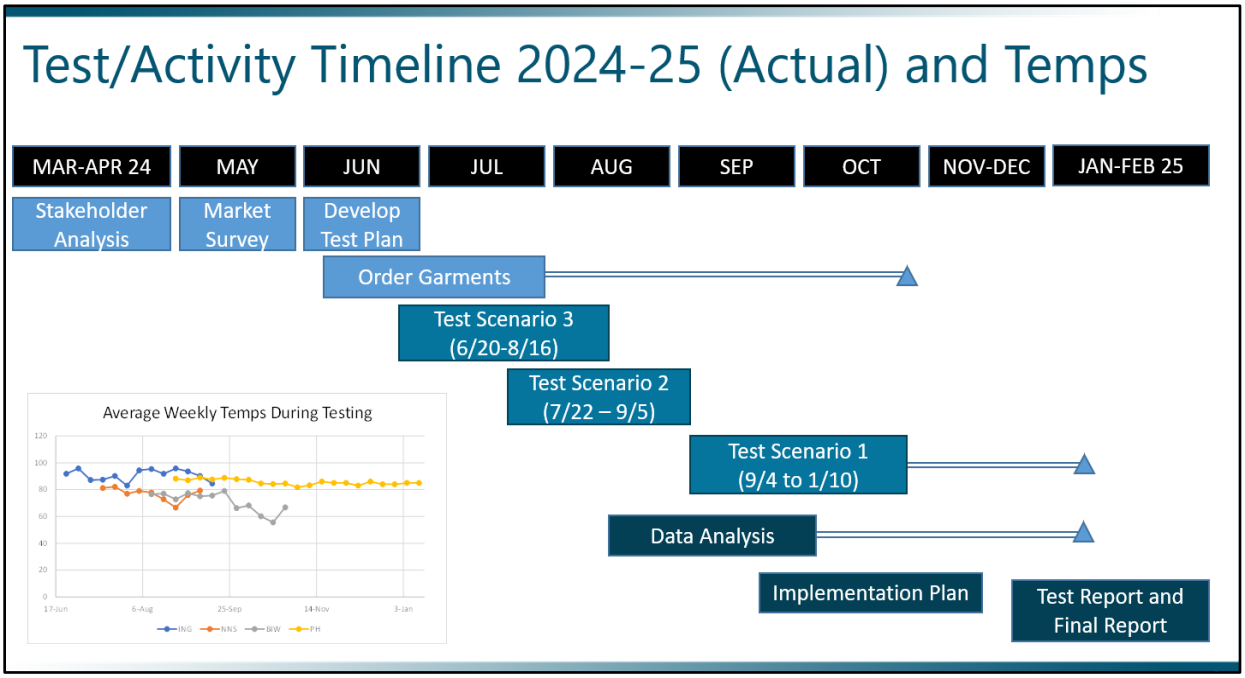

Figure 5. High level Project Schedule and Ambient Temperatures during Test Periods.

Summary of Test Responses

RESPONSE VALUES: Garments in Column 1, Questions in rows 1-2, resonses rated from 1) low agreement (bad) to 5) high agreement (very good)	Did the garment keep you cool for a full work shift?	The garment does not interfere with work	Did this make an improvement in your work day comfort?	Do you think the garment would fit multiple body types?	Were you satisfied with the cooling effectiveness if this garment?	Do you think the garment enhances your personal safety?	Do you think the garment enhances your job productivity?	Was the garment fast and easy to put on and remove?	If this was readily available, would you use this garment?	# garments with average Score of 3.5+	# garments with average Score of 4+
Question #	14	15.5	16	17	18	19	20	21	22		
1.1 Allegro 8300 vest	3.93	2.71	2.71	2.64	3.64	2.36	2.71	3.07	2.57	2	0
1.2 Allegro 8450 low profile vest	3.94	2.56	4.06	3.56	4.56	3.22	3.61	4.06	4.19	7	4
2.1 TDA black shirt	3.38	3.15	3.85	2.29	3.32	2.15	3.23	3.31	3.00	1	0
2.2 GlacierTech PCM Vest	1.56	3.68	2.31	2.89	2.37	1.96	2.19	3.38	2.69	1	0
2.3 TN/HK Orange Evap Vest	3.45	4.08	3.70	3.55	3.73	3.60	3.60	4.00	4.00	8	3
2.4 TN/HK Blue Ice Vest	1.50	3.67	2.00	2.83	2.17	1.50	1.83	3.83	1.67	2	0
3.1 TN/HK Beanie/HelmetLiner	2.89	3.92	2.77	4.11	3.38	2.00	2.44	4.33	3.15	3	2
3.2 Mission Beanie/Skullcap (VA)	3.06	3.12	3.20	4.24	3.64	2.53	2.71	4.65	3.56	4	2
3.3 Mission Beanie/HelmetLiner (HA)	3.67	2.52	3.48	4.20	3.57	3.07	3.13	4.87	4.10	5	3
3.4 Mission Bandana	3.60	2.69	3.92	4.35	4.19	3.55	3.40	4.75	4.54	7	4
3.5 TN/HK Neck Shade FR	3.63	2.59	3.55	4.13	3.27	3.63	3.13	4.00	4.05	6	3
3.6 Ergodyne LS Sun Shirt blue	3.60	3.14	3.81	4.47	3.90	2.73	3.53	4.53	3.90	7	2
3.7 Mission Safety Shirt (HA) yellow	4.10	3.00	3.93	4.52	4.07	3.57	3.67	4.90	4.15	8	5
3.8 Mission Perform Shirt (VA) Red	2.67	2.83	2.83	3.33	3.67	3.00	2.17	3.67	3.33	2	0
3.9 ArcticCool Wicking Shirt White	2.43	2.83	2.92	4.00	3.17	2.57	2.43	4.29	3.00	2	2

Figure 6. Summary Table of Response Values, Averaged

Figure 6 is a summary table that represents the average score of each garment for each question. Note, responses for all the garments tested are shown. Garment types are listed along the left column, questions are along the top rows, and average values are in each cell. The color coding is an additional, visual component showing greener for higher/better score, and redder for lower/poorer score. The data is no different with or without the color coding. The two white columns on the right count how many garments had an average score of 3.5 or higher (good agreement) and above 4.0 (very good agreement) across the questions. This is a simplified way to quantify the best scoring garments.

Results for each of the questions can be plotted individually or collectively. Test Results, as well as a comparison of garments, within each Scenario and a summary of the comments provided on each garment by the test volunteers. Although we did not create a specific question for overall favorite garment, asking if the user would wear a garment at their own choice if available is pretty close to asking their favorite. For the sake of the comparisons, we will use Q22 as the overall 'preference' indicator (although the average data for all garments and questions are shown in Figure 6, should the reader like to run additional analyses.)

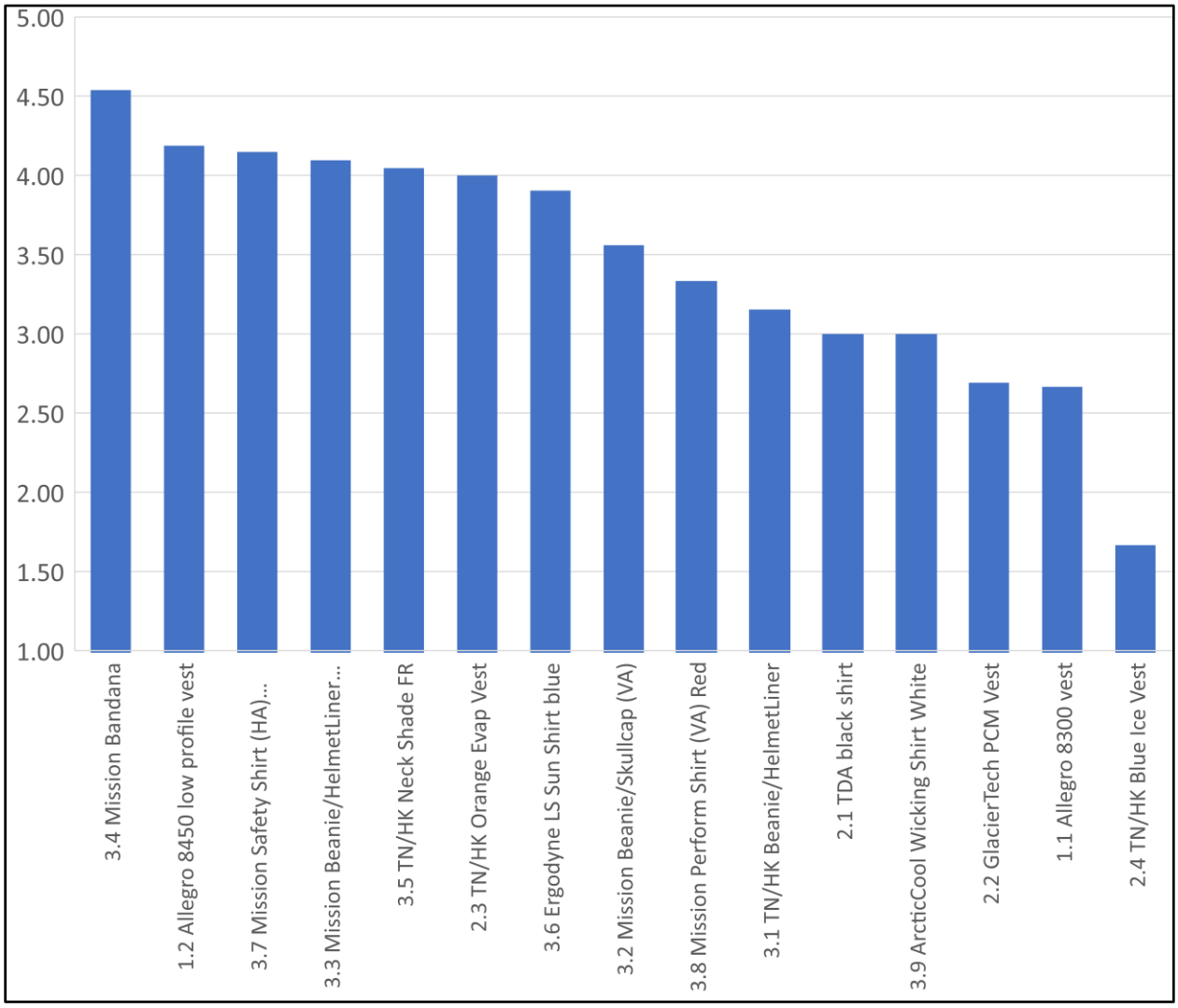

Figure 7. Pareto of Q22: If Available, Would You Use This Garment (Highest to Lowest scores)

Figure 7 is a pareto graph corresponding to Question 22, "If this was readily available, would you use this garment?" It is the same data as Figure 6 but sorted to depict scores from highest to lowest. This helps us visually sort the best performers and any break lines between categories. For example, the highest scoring garment, 3.4 Mission Bandana, was the only garment averaging over a 4.5 score and was overall quite a bit higher than the next best group. The next group of 6 garments did well (from 3.9 to 4.2) but then there was a drop to the next set, which scored below 3.6, with the one lowest scoring garment a whole point lower than the next lowest scoring garment.

We are pleased to find that six garments scored an average at or above a 4.0, which is a promising takeaway for the overall study findings. Garments 3.4 Mission Bandana, 1.2 Allegro 8450 low profile vest, 3.7 Mission Safety Shirt (HA) yellow, 3.3 Mission Beanie/Helmet Liner (HA) and 3.5 TN/HK Neck

Shade FR. Good results were found for two garments that scored above an average of 3.5, which were 3.6 Ergodyne LS Sun Shirt blue and 3.2 Mission Beanie/Skullcap (VA).

The top three scoring garments overall were:

- 3.4 Mission Bandana scored best as most likely to be used and scored well on most questions
- 1.2 Allegro 8450 low profile vest scored best for comfort and cooling effectiveness
- 3.7 Mission Safety Shirt (HA) yellow scored best for all-day endurance

These are the recommended items for initial pilot implementation in shipyards.

Work Scenario	Body Cooling Garment Tested	Q22 Avg. Score	Price per Garment
1) Forced Air Vest	1.2 Allegro 8450 low profile vest	4.19	$$$
2) Mobile Vest	2.3 TN/HK Orange Evap Vest	4.00	$$
3/ Head Cover (three options)	3.4 Mission Bandana	4.54	$
	3.3 Mission Beanie/Helmet Liner (HA)	4.10	$
	3.5 TN/HK Neck Shade FR	4.05	$
3/ Shirt (2 options)	3.7 Mission Safety Shirt (HA) yellow	4.15	$$
	3.6 Ergodyne LS Sun Shirt blue	3.90	$$

Figure 8. Highest Scoring Garments in each Work Scenario, and their Relative Price Ranges

The cooling garments in Figure 8 include a few other good options to pilot, depending on the available budget for implementation. Although the exact costs may vary, we were able to identify general cost ranges for the garments tested and their affordability, which can be summarized in this cost legend:

$	= under $20	Highly Affordable
$$	= $20-60	Affordable for Many
$$$	= $60-$250	Less Affordable for Most
$$$$	= over $250	Least Affordable

Figure 8 demonstrates that you can find effective cooling garments in all price ranges, and buying expensive items does not guarantee they are the most effective at cooling and comfort. All the top scoring head-cover garments for Scenario 3 are highly affordable, implying that the majority of shipyard workers could afford to buy their own. The top scoring shirts and vest were fairly affordable, although it may have a lower implementation success rate if price is a deterrent for workers to buy themselves. All of these could have wide distribution throughout the shipyard. The highest priced garment in Scenario 1 also has a narrower range of work scenario applications, for example Paint workers who are tied to compressed air. In this case, one might consider working together with the department to subsidize purchasing for a set team of workers on specific work activities. We hope that the audience will find benefit in understanding these findings, and we sincerely hope this contributes to addressing and relieving worker discomfort in future hot work environments.

Implementation Plan

The implementation plan was developed for shipyard teams who are looking to make body cooling garments more available to shipyard workers. The intention of this deliverable is to help identify key roadblocks to shipyard-wide rollout, present some of the human factor implementation challenges, and identify logistics issues of mass distribution, usage, financials and longevity. The objective is to identify concepts to feed potential solutions and scenarios for shipyard use. Rather than specify methods to implement certain garments, we aimed for the overall discussion. It discusses issues with financial feasibility, top challenges, and identifies risk reduction opportunities.

The participating shipyards addressed questions related to:

1) Challenges and Roadblocks
2) Ownership and Maintenance
3) Worker Engagement
4) Distribution
5) Maintenance
6) Recharging Cooling Capacity
7) Accessing via the Shipyard Company
8) Funding Source - Who Pays
9) Addressing Financial Limitations
10) Distribution of Less Expensive Garments
11) Distribution of More Expensive Garments
12) Shipyard Support Challenges
13) Risk and Mitigation
14) Open Suggestions

Details were delivered within the project team.

Technology Transition Opportunities

Throughout the project, we have exercised several opportunities to present information about the project, progress to date and findings as possible. This included an NSRP virtual presentation prior to award, three NSRP virtual presentations during panel meetings during the project, and in-person presentation to ASNE-SNAME local chapter in Mobile, AL, and we are anticipated to share final results in person at an NSRP All-Panel meeting just after the project is completed.

NSRP Panel Meeting 8/02/23 (Proposal, Pre-Project)

The proposal team was invited to present the project concept in August 2023 to a NSRP panel meeting. The purpose of giving this presentation was to share ideas about the project concept, identify the project team members, gain attention from NSRP decision makers, and gather feedback and guidance from the audience.

NSRP Sustainment Panel Meeting 3/13/2024

The proposal team was invited to present the project concept in March 2024 to a NSRP Sustainment panel meeting. Since we had just been awarded the contract and were gathering the team members, we didn't have much to report but shared the purpose and key activities planned.

NSRP Workforce Compliance Panel Meeting 6/07/2024

The proposal team was invited by the NSRP Workforce Compliance Panel Chair to present the interim project status report in June 2024 to a NSRP Workforce Compliance panel meeting. We presented the team, project objectives, list of deliverables and task overview. At that point in time, we had completed the Stakeholder Analysis, so we discussed the process, sample work scenarios, key performance indicators, and the project timeline. We had already started the Market Survey, so we briefly discussed how the output of the stakeholder analysis fed both a preliminary search boundary for identifying technologies to study, as well as contributing concepts to a future test plan.

NSRP Sustainment Panel Meeting 9/17/2024

The proposal team was invited by the NSRP Sustainment Panel Chair to present the interim project status report in September 2024 to a NSRP Sustainment panel meeting. At that time, we had completed the Market Survey and Test Plan and had received some of the garments and begun some of the testing. The presentation reflected on the stakeholder analysis then presented what we had determined to be three test scenarios for the study, discussed four of the key underlying technology types and their cooling mechanisms, and we presented the test articles for the three scenarios also mapped to their underlying technologies. Forecasting test results, we presented a sample response matrix (test garments vs. the worker test s, with ratings), and some sample/preliminary results based on what we'd seen so far. Some anecdotal initial success stories were presented based on feedback from testers. Finally, we

began to look at ways to feed an implementation plan, including grouping garments based on price points, and presented some lessons learned.

ASNE-SNAME Member Meeting 9/09/2024

We leveraged the presentation that was prepared for the sustainment panel meeting to drive external exposure. Since the author has received several invitations from a local Mobile, AL, chapter of the American Society of Naval Engineers (ASNE)/Society of Naval and Marine Engineers (SNAME) to present material. Therefore, we used the same presentation and provided the same results to a broader audience. Attendees included company representatives from Austal Shipyard, Bollinger Shipyard, Ingalls, U.S. Navy, Mobile Chamber of Commerce, and others. In addition, since this was an in-person presentation, the speakers brought sample garments and put on a display so the audience could come up and see them firsthand, see the shape/material/quality, and ask questions.

NSRP All-Panel Meeting 02/25/2025

In December 2024, we submitted an abstract to NSRP for presentation at the NSRP All Panel meeting in February 2025. NSRP leadership granted us a two-week, no-cost project extension so we can present to the NSRP Sustainment Panel (on 2/25/25) and the NSRP Workforce and Compliance panel (on 2/26/25). This was a great opportunity to present the results across a wide range of NSRP members and participants. We brought sample garments for show-and-tell since this was well received in the ASNE-SNAME meeting. That document should be available from the NSRP Website.