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**“ОЦЕНКА ЭФФЕКТИВНОСТИ УПРАВЛЕНИЯ ПЕРСОНАЛОМ
ЧЕРЕЗ СИСТЕМУ ОЦЕНКИ РЕЗУЛЬТАТИВНОСТИ: ПРИМЕР
ОРГАНИЗАЦИИ С ВЫСОКОЙ НАДЕЖНОСТЬЮ”**

**“EVALUATION OF THE EFFECTIVENESS OF PERSONNEL
MANAGEMENT THROUGH PERFORMANCE ASSESSMENT:
EVIDENCE FROM A HIGH-RELIABILITY ORGANIZATION”**

Аннотация

Организации с высоким уровнем надежности, например атомные электростанции, аэропорты и химические заводы, сталкиваются с экзистенциальными рисками, которые делают традиционную оценку управления персоналом неадекватной. Из-за этих рисков управление персоналом следует рассматривать не как вспомогательную функцию, а как основную стратегическую структуру по снижению рисков. Это означает, что для оценки его эффективности нам необходимо выйти за рамки простых показателей эффективности и использовать более комплексную, многомерную систему, основанную на данных о производительности. Целью данного исследования является разработка и поддержка концептуальной основы для оценки эффективности управления персоналом с помощью интегрированной системы служебной аттестации, специально разработанной для удовлетворения строгих потребностей СПЧ. В исследовании используется концептуальный исследовательский подход, объединяющий новейшую литературу по стратегическому управлению человеческими ресурсами (HRM), управлению эффективностью и теории высокой надежности. Предлагаемая структура описана в контексте и проиллюстрирована на примере проекта атомной электростанции Руппур (RNPP) в качестве репрезентативного примера. В результате анализа была разработана комплексная система, которая измеряет эффективность управления персоналом посредством синергетической интеграции четырех групп показателей: готовность на основе компетенций, соблюдение правил

поведения и техники безопасности, выполнение индивидуальных задач и системная эффективность управления персоналом. Важно отметить, что система управления производительностью (PMS), которая объединяет все это, характеризуется стратегической согласованностью, справедливостью процедур и обратной связью по замкнутому циклу для бесконечного продвижения вперед. Таким образом, эффективное управление персоналом в СПЧ - это не пассивный результат, а активный, поддающийся измерению процесс, и его оценка наиболее эффективна, когда оценка эффективности превращается из разрозненного административного ритуала в непрерывный стратегический инструмент, богатый данными. Этот путь напрямую повышает надежность персонала, укрепляет культуру безопасности и является конкретным доказательством вклада отдела кадров в устойчивость и долгосрочную жизнеспособность организации.

Ключевые слова: управление персоналом; Оценка эффективности; Эффективность человеческих ресурсов; Показатели эффективности; организации с высокой надёжностью; Культура безопасности; Постоянное совершенствование

Abstract

*High-reliability organizations (HROs), for instance nuclear power plants, airports, and chemical plants, have existential risks that make traditional personnel management evaluation inadequate. Because of these risks, HR should not be seen as a support function but as a core strategic risk mitigation structure. This means that to assess its effectiveness, we need to go beyond simple efficiency metrics and use a more comprehensive, multi-dimensional framework based on performance data. The house of this study is to evolve and support a conceptual framework for evaluating personnel management effectiveness through an integrated performance assessment system that is specifically designed for the rigorous needs of HROs. The study uses a conceptual research design to bring together recent literature from strategic human resource management (HRM), performance management, and high-reliability theory. The proposed framework is contextualized and exemplified using the **Rooppur Nuclear Power Plant Project (RNPP)** as a representative case study. The analysis results in a composite framework that measures the effectiveness of personnel management through the synergistic integration of four indicator clusters: competency-based readiness, behavioral and safety adherence, individual task performance, and systemic HR effectiveness. Importantly, a performance management system (PMS) that connects these is characterized by strategic alignment, procedural fairness, and closed-loop*

feedback for endless advancement. Thus, effective personnel management in HROs is not a passive outcome but an active, measurable process, and its evaluation is most robust when performance assessment evolves from a sporadic administrative ritual to a continuous, data-rich strategic tool. This path directly elevates workforce reliability, strengthens safety culture, and offers concrete proof of HR's contribution to organizational resilience and long-term viability.

Keywords: *Keywords: Personnel Management; Performance Assessment; Human Resource Effectiveness; Performance Indicators; High-Reliability Organizations; Safety Culture; Continuous Improvement.*

Introduction

High-reliability organizations (HROs) operate in complex, harsh situations with little room for mistake. A single procedural error, skill gap, or behavioral variation can cause devastating loss of life, environmental damage, and social and economic upheaval. Such entities' technological backbone is complex engineering and redundant safety mechanisms, but human performance determines reliability. This unavoidable reality upgrades human management from administrative need to strategic operational risk management. Nevertheless, a deadly dilemma remains: how can one statistically and qualitatively evaluate the function responsible for human reliability? Attrition rates, training hours, and payroll accuracy are required but insufficient. They are trailing indicators, mute on competency preparedness, safety protocol compliance, and HR system agility. This paper addresses this crucial gap. It claims that a strong, multi-faceted performance evaluation system, strategically developed and fully integrated, is the best diagnostic tool for HRO people management effectiveness. The research uses **the Rooppur Nuclear Power Plant Project (RNPP)**, a classic HRO, to base its theoretical framework in safety-critical megaproject realities.

Literature Review

Three different research streams support this topic. The development of strategic human resource management (HRM) has shown that more complex HR practices improve the performance of organizations. Becker and Huselid (1998) showed that high-performance work systems use employee skills and motivation to improve the success of the organization. In HROs, this strategic responsibility includes operational integrity and reducing existential risks, making HR the protector of business survival. Second, performance management has changed in important ways. Aguinis (2019) and Pulakos et al.

(2019) stress the importance of criticism that looks to the further, aligning goals, and evaluating "what" (consequences) and "how" (behaviors and competencies). DeNisi et al. (2023) accurately refer that these ideas have not yet been applied in ultra-high-risk, technologically advanced settings and need to be studied in context. Additionally, research on high-reliability organizations clarifies the cultural and procedural framework that allows for error-free

operations. Reason (2016) and Bourrier et al. (2019) argue that dependability includes systems that foresee, identify, and alleviate issues before they escalate, requiring a pervasive "safety culture" characterized by concern over failure, reluctance to oversimplify, operational sensitivity, resilience, and competence. In this society, human performance is very important. Kim and Park (2022) connect high-reliability organization safety results to strict human performance management, which includes following procedures, following safety rules, and doing regular checks. These three bodies of literature show the main research gap. They all agree that human elements need to be watched and controlled, but very few comprehensive models use performance assessment data to measure the overall effectiveness of the people management system. This study brings these areas together into an evaluative framework to fill this gap

Statement of the Problem

Strategic HRM, contemporary performance management, and HRO theory interpretation a systemic operational and academic challenge: a deficiency. In HROs, performance assessment data is generally kept separate and not utilized enough. It helps with decisions on promotions, incentives, and training needs, but it isn't put together and looked at to answer the most crucial strategic question: Is our people management system, which includes hiring, onboarding, training, deployment, and developing the company's culture, making and keeping a staff that is dependable in terms of operations?

This problem is particularly bad in huge, tech heavy initiatives like RNPP. Our staffs come from several divergent backgrounds, the rules are quite stringent, and projects might last for many years. Not being able to fully assess how well personnel management is working forms blind spots. Perhaps, latent, systemic capability gaps may grow; the safety culture's real health may be misjudged based on anecdote rather than data; and HR's strategic value may remain intangible, often being seen as a cost center rather than a risk mitigation center.

Hence, the fundamental delinquent with the research is that there isn't a full, comprehensive, and valuable framework for conducting performance

assessment to look at how well HRO manages its employees. The report says that the following things need to be done to fix this complexity:

1. To deconstruct performance assessment's administrative, developmental, and behavioral responsibilities in HRO personnel management's strategic mandate.
2. Identify, organize, and link the important indicator domains (individual, competency-based, behavioral, safety, systemic HR) for a holistic review.
3. To suggest and outline operational methods integration, PMS auditing, and feedback loops to integrate discrete indications into an evaluation framework.
4. Use the RNPP case study to contextualize and demonstrate this framework's practical consequences, problems, and management insights.

Description of the Study

Methodology.

Methodologically, the study takes a conceptual and analytical approach. The methodology of this study does not involve the presentation of empirical data but the formulation of a logic-based framework through the systematic analysis of existing theories and researches in the related fields of HRM and safety science. The methodology of the study takes an abductive approach, starting from the existing theories in the fields of HRM and safety science in an effort to develop a conceptual framework that has not yet been developed previously. The Rooppur Nuclear Power Plant project would be used as the critical case in the study because the case offers a practical context in which the framework can apply and can develop the components of the framework for application.

Results and Discussion.

1. Performance Evaluation Re-conceptualized:

Tripartite Function. The research shows that performance evaluation in an HRO must be designed to satisfy three interdependent, equally vital tasks beyond administrative duties.

The Compliance and Administration Function: This core layer delivers objective data for legally acceptable and operationally good decisions: safety-sensitive jobs, certification renewals, essential position succession planning, and risk-informed remuneration. This function is crucial to RNPP.

regulatory compliance, ensuring an individual's fitness to conduct error-prone duties.

Proactive and developmental risk mitigation: This makes performance evaluation strategic and forward-looking. It systematically finds individual and community competence gaps in technical knowledge, stress-related decision-making, procedural understanding, and emergency response. Chart demonstrates idea.



Figure: Linkage between Competency Assessment and Workforce Readiness

These constraints necessitated individualized professional expansion, simulations, and targeted training. This supports your business retain knowledge and level up employee skills.

The HRO part of embedding culture and aligning behavior is imperative. In this case, safety culture is judged by how well people work together when things go wrong, report incidents swiftly and accurately, communicate when handing off tasks, and follow standard operating procedures. The performance system shapes the business's "personality" through measurable actions, feedback, and recognition. It also certifies that everyone's work lights the group's reliability needs.

2. Integrated Indicator Framework: Composite Dashboard.

The evaluation of personnel management effectiveness necessitates multiple measures. Exploiting a particular Domain results in image distortion. The proposed framework consists of four clusters.

Performance metrics for each task Completion of tasks, along with quality, accuracy, and timeliness, is adjusted for safety-critical outputs, **for example** calibration log error rates and adherence to procedural checkpoints.

Indicators Based on Competency: These assess the reliability of the workforce. The components encompass certification, outcomes from

knowledge-based and practical tests, performance in high-fidelity simulations, and expertise in innovative technologies or processes.

The primary cultural health indicators are focused on behavior and safety. Measurements encompass audits of procedure compliance, participation and performance in emergency drills, the volume and quality of safety suggestions and near-miss reports, and evaluations of safety-conscious behavior by peers and observers.

Macro-level indicators of systemic HR effectiveness assess the people management system. Metrics include the duration to fill safety-critical positions, turnover rates for high-potential and mission-critical personnel, return on investment for training programs (measured through competency enhancement), and, crucially, employee perceptions regarding the fairness, transparency, and utility of performance management systems.

The thorough analysis of these clusters renders this approach effective. A decline in task performance within an explicit unit, alongside dormant proficiency scores and condense near-miss reporting, specifies a systemic failure in training, oversight, or cultural psychological safety that is more noteworthy than any individual metric.

3. Putting things together and judging how well the framework works. A framework is just a theory until it is put into action. Three main ways are suggested:

Dashboard, Weighted Integration Putting together: Weight indicators that show the most important parts of a strategy. When it comes to RNPP commissioning, behavioral and competency indicators may be more useful than production measures. Managerial dashboards should put together data from all four segments to show trends, correlations, and red flags. This will let HR and operational decisions be based on facts.

Meta Evaluation: Self-Check for PMS. You need to check the evaluation system on a regular basis. This meta-assessment fits with the areas su;



Figure: Dimensions of Performance Management System Effectiveness

examines the PMS's perceived fairness, reliability, strategic alignment, and above all the degree to which its upshots are actually used to drive HR interventions. An absolutely layout nevertheless, ignored PMS is a indication of fruitless HRM.

Closed-Loop Feedback and Continuous Improvement: The framework must be dynamic. As shown in

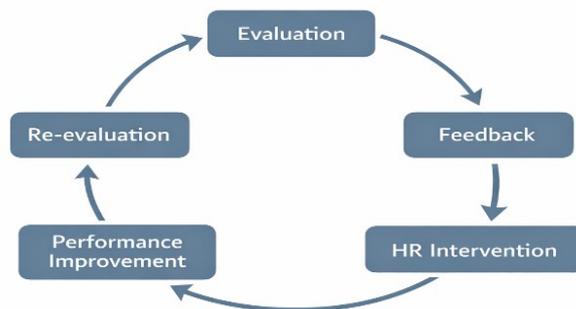


Figure: Continuous Improvement Loop in Personnel Management Evaluation

An impact of assessment ought to feed a closed loop scheme. By modification of lead policy and a behavioral breaches can be inspiration for novice training, competence restrictions shape curriculum creation besides systemic HR capacities. This offers a self-correcting, learning-oriented people management system that adapts to technology and regulations. Relevance to RNPP and Challenges. This approach requires RNPP to conduct a thorough, multi-source evaluation of safety-sensitive employees.

Thus, an engineer's assessment would include project deliverables, nuclear-grade processes, simulated disaster performance, and "reporting culture." This data lets leadership answer central issues with evidence: Our "human firewall": capable and resilient? Where are we vulnerable systemically? This changes HR's job drastically. Implementation is problematic due to designing valid, non-gameable metrics for complex behaviors, mitigating rater bias through rigorous assessor training, ensuring perceived fairness to maintain employee trust and engagement, and building the data infrastructure to support integrated analysis. The particular hindrances must be overwhelmed for the framework to be trustworthy and convenient.

Conclusion

This research introduces a coherent method for advanced people management effectiveness evaluation in high-reliability companies. This sort of efficacy can only be determined by combining data on individual production, confirmed competence, safe conduct, and HR process efficiency.

Scientifically, our blend of tactical HRM, performance management moreover, HRO concept to gratify a conceptual need is substantial. Performance data is easy to integrate into a higher-level people management system assessment.

Managers in safety critical roles and HR people have to deal with some pretty big implications. It is not easy for them. The framework that is talked about here, it helps shift things from just going by gut feelings or stories people tell to actually looking at facts and solid evidence. That seems important because it makes decisions more reliable. Then there is how it uses performance data, you know, to cut down on risks, build up worker skills, and overall push for better safety. I think that part is key but it might be oversimplifying a bit. For this whole system to work, though, you need money put into it, strong leadership, and some technical support too. Companies really cannot skip that, especially when their employees are basically the final barrier against some kind of disaster happening. They just have to invest in it.

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