Research on Company A's Competency-Based Training Curriculum System for Infrastructure Talent

Changqing Du [a], Dong Zhao [b], Aihong Mao [c], Weina Wu [d*], Chun Pei [e], Yu Fang [f], Qingrong Zhu [g]

JIANGSU POWER TRANSMISSON & TRANSFORMATION CO., Ltd., Nanjing, 210000, China

[a]1186730296@qq.com, [b]2779851258@qq.com
[c]duanxiaohan666@qq.com, [d*]123156943@qq.com
[e]230259309@seu.edu.cn, [f] wyrwfywjl@163.com
[g]745599730@qq.com

Abstract. Against the backdrop of the new power system transformation, the power industry has elevated its core competency requirements for infrastructure talent, prompting State Grid enterprises to reform their human resource management. As a tool bridging job demands and talent development, the competency model provides a precise, personalized implementation framework for talent training by systematically identifying the capabilities and competencies of high-performing individuals. This study analyzes the impact pathways of the new power system transformation on infrastructure enterprises' operational models and training systems, revealing shortcomings in traditional competency models and training systems when addressing the demand for multi-skilled talent. Based on an analysis of the job responsibilities and competency requirements for positions such as Team Leader/Assistant Team Leader, Chief Engineer, and Project Manager, this study employs literature review, questionnaire surveys, and interviews to conduct an in-depth investigation into the current state of infrastructure talent development at Company A. It establishes a competency model for infrastructure talent centered on three dimensions: comprehensive capabilities, professional capabilities, and personal traits. It systematically outlines implementation pathways for employee competency model reconstruction, competency dictionary coding, and the development of a "full-cycle, systematic" curriculum system, thereby comprehensively enhancing the quality and capabilities of infrastructure talent.

Keywords: New power system, Competency model, Talent training

1 Introduction

Against the backdrop of clean energy structure transformation and accelerated construction of new power systems, the construction of power infrastructure is facing un-

© The Author(s) 2025
H. Dai et al. (eds.), *Proceedings of the 2025 5th International Conference on Business Administration and Data Science (BADS 2025)*, Advances in Computer Science Research 125,
https://doi.org/10.2991/978-94-6463-980-3_32

precedented opportunities and challenges. At the national strategic level, the importance of building a modern infrastructure system has been repeatedly emphasized, which puts forward systematic and forward-looking new requirements for the ability and quality of the infrastructure talent team that undertakes the heavy responsibility of construction. The traditional talent cultivation model that relies on experience and fixed job norms is difficult to meet the comprehensive needs of the new power system for talent in technology integration, project management, digital applications, and strategic collaboration. As a core tool of modern human resource management, competency models can systematically identify the knowledge, skills, and intrinsic traits possessed by high-performance individuals, providing scientific basis for precise and personalized talent cultivation. Although the theoretical development of this model is relatively mature, its practical application in the specific field of power infrastructure, especially how to systematically transform it into a training curriculum system covering the entire career cycle of talents, still needs to be further explored. Therefore, this study takes Company A as a specific case, aiming to construct a competency model that is tailored to the actual infrastructure business and covers three dimensions: comprehensive ability, professional ability, and personal traits. Based on this, a "full cycle, systematic" training curriculum system is designed to provide a practical path and solution for the cultivation of infrastructure talents in State Grid enterprises and even broader state-owned enterprises.

2 Problem Statement

With the continuous growth of global energy demand and the rising awareness of environmental protection, the modernization of power systems has become a critical challenge faced by countries worldwide[1]. In 2023, the Second Meeting of the Central Committee for Comprehensively Deepening Reform proposed accelerating the construction of a new power system that is clean and low-carbon, safe and abundant, economically efficient, supply-demand coordinated, flexible, and intelligent[2]. The Political Bureau of the CPC Central Committee has repeatedly emphasized "strengthening infrastructure construction," "optimizing the layout, structure, functions, and development models of infrastructure," and "building a modern infrastructure system." Against this political backdrop, the nation has set higher and more systematic requirements for cultivating talent in the infrastructure sector. This necessitates a shift toward a new talent development paradigm guided by national strategic needs, centered on engineering practice capabilities, and achieved through deep integration of industry and education. Consequently, cultivating versatile professionals suited to the demands of the new era and enhancing employees' comprehensive qualities and innovation capabilities play a crucial role in advancing the upgrading and transformation of the power industry[3] .

Regarding talent training system development, scholars worldwide have produced extensive theoretical work on competency models. Boyatzis (1982) defined competency as the underlying human characteristics that lead to or result in effective or outstanding performance[4]. Zhao Xiaokun and Mu Hanfei (2025) propose that competency

models, as vital tools in human resource management, represent a combination of distinct competency elements required to perform a specific job or achieve a particular performance objective[5]. Yin Defa (2013) categorizes competency models into three types based on applicability: generic competency models, core competency models, and proprietary competency models[6] . HamidN and Saied (2024) identified three competency model levels: managerial, organizational, and individual. These encompass strategic partnership, organizational knowledge, industry awareness, external awareness, paradoxical thinking, management knowledge, relationship management, resource management, leadership, human resource analysis, IT knowledge, personality traits, development, multitasking, and cognitive abilities.[7]. Y. Fajar Sitohang (2020) constructed a generic competency model comprising six competency clusters: goal and action management, human resource management, coaching subordinates, caring for others, and knowledge.[8]. Whiddett and Hollyforde (2000) concluded that competency-based human resource management uses competency models as the foundation for developing human resource strategies. Practical applications include selection, career and competency development, performance management, and compensation management.[9]. Research and applications of competency models by domestic and international scholars provide insights and references for the power industry's development. However, systematic exploration and practical implementation of a competency-based human resource management system tailored for the power sector remain relatively scarce.

Domestic research findings on competency model applications in talent training include: Wang Zhengxin (2025) explored optimization pathways for a competency-based client manager training system, achieving systematic enhancement of client managers' competencies across multiple dimensions including emotional intelligence and communication, data application, and cross-departmental collaboration.[10]. Zhao Xiaokun et al. (2025) reviewed the theoretical foundations of competency models, analyzed existing issues in corporate human resource management, and proposed optimization strategies for HRM based on competency models.[11]. Gao Qijun (2025) emphasizes developmental core competencies—such as employee loyalty, professional passion, and latent strengths—in competency model construction, effectively driving improvements in employee performance and organizational growth.[12]. Although competency models have demonstrated initial effectiveness, practical implementation faces numerous challenges, including model accuracy, adoption rates, and integration with other management systems. Furthermore, within the power industry, traditional competency models are predominantly built on historical experience and job specifications, emphasizing specialized skills in power generation and equipment maintenance[13]. This approach fails to align with national demands for versatile talent. Based on the above, this study constructs a "full-cycle, systematic" curriculum framework oriented toward infrastructure talent competencies, grounded in competency modeling.

3 The Development Process of the Competency Model at Company A

Company A is a state-owned enterprise holding Grade 1 National Power Engineering Construction General Contracting and Grade 3 Building Construction General Contracting qualifications issued by the Ministry of Construction. In recent years, as power enterprises transition toward new power systems, Company A has adhered to a people-oriented principle, placing high importance on skilled talent development. Aligned with State Grid Corporation's strategic direction of "high-quality education and training for cadres and employees," it has conducted in-depth research on the systematic construction and design of the entire infrastructure talent growth process. This research proposes a "full-cycle, systematic" theoretical model for infrastructure talent education and training, providing replicable and scalable experiential paradigms and policy recommendations for state-owned enterprises to build high-quality, specialized skilled talent teams in the new era.

3.1 Approach and Methodology

The model's development adheres to five fundamental principles: task orientation, hierarchical differentiation, multidimensional focus, operational feasibility, and continuous improvement mechanisms. This ensures scientific rigor, practical applicability, and forward-looking vision. The construction process employs a three-pronged research strategy—literature review, questionnaire survey, and critical incident interviews—guaranteeing rigorous methodology, comprehensive data, and reliable conclusions. First, the literature research method is implemented to systematically sort out the classical theories of competency models at home and abroad and the latest practical achievements in the power industry, and three main dimensions of the model are extracted, including comprehensive ability, professional ability and personal characteristics. Subsequently, structured questionnaires were distributed and collected from core personnel, identifying initial core competency requirements for each level based on reported capability gaps. Finally, comprehensive key-event interviews were conducted with senior and middle managers, human resources personnel, and technical specialists. This process extracted the model's three primary dimensions—integrated capabilities, professional competencies, and personal traits—and established a coding dictionary with multiple secondary indicators. Differentiated indicator definitions and behavioral descriptions were developed to address the distinct competency requirements of various positions.

3.2 Building Process

3.2.1 Competency Model Development. To ensure the scientific rigor and systematic nature of competency model development, this study adopts Boyatzis '(1982) seminal "Iceberg Model" as its theoretical framework[14]. The model categorizes individual competency elements into two distinct layers: the visible "surface-level components"

(e.g., knowledge, skills) and the submerged "latent components" (e.g., values, traits, motivations). Building upon this framework and aligning with the operational characteristics of power infrastructure professionals and organizational strategic needs, the study constructs a competency model for A Company's infrastructure workforce comprising three interconnected yet clearly stratified dimensions: professional expertise, comprehensive competencies, and personal attributes, as shown in Figure 1.

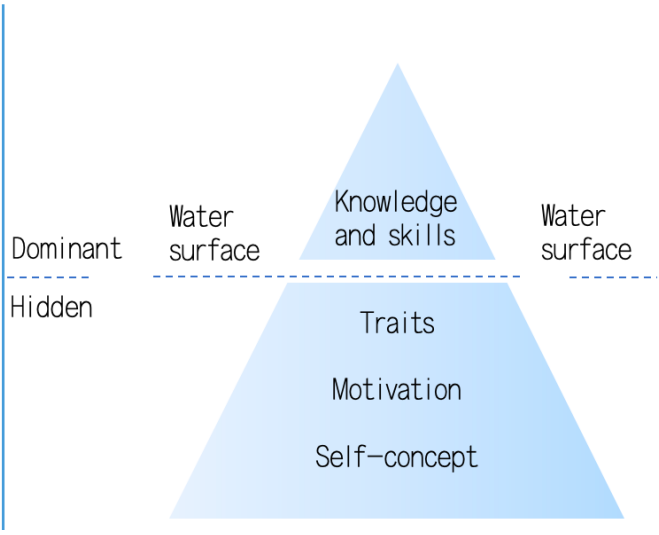

Fig. 1. Iceberg Model

Professional competence corresponds to the surface layer of the "Iceberg Model", representing the observable and measurable expertise, technical protocol implementation capabilities, and practical skills required by employees in specific power infrastructure fields (such as transmission, substation, commissioning, etc.) to fulfill their responsibilities. This dimension serves as the foundation and direct manifestation of talent competency in job performance, with its cultivation effectiveness directly measurable through concrete work outcomes and performance indicators.

Comprehensive competence is located in the middle layer of the "iceberg". It is the general management and cognitive ability that supports employees to effectively use their professional competence to deal with more complex situations and challenges. It determines whether employees can transform their professional knowledge into high-performance behavior, and is the key to realize the transformation from "technical expert" to "management backbone" or "business expert".

Individual traits, forming the bedrock of the Iceberg Model, represent the intrinsic, deep-rooted, and relatively stable psychological characteristics and value orientations that drive personal behavior. Though challenging to measure directly, these traits profoundly influence employees' work attitudes, decision-making patterns, and critical decision-making behaviors. They serve as the fundamental driving force supporting long-term career development and risk resilience.

These three dimensions together constitute a complete spectrum of capabilities from "appearance" to "potential", from "basic execution" to "strategic guidance", ensuring that the model can not only accurately describe the current job requirements, but also effectively lead the future development of talents.

3.2.2 Model building and data support. Following preliminary literature research, multiple rounds of extensive diagnostic surveys were conducted to translate strategic directions into specific competency elements, as shown in Figure 2.

At the team leader level, "Safety Production and Risk Prevention" emerged as the core competency with 91.18% recognition, while "On-site Emergency Response Capability" achieved 79.41% consensus. These two high-consensus competencies jointly point to the essential knowledge and skills required for ensuring production safety.

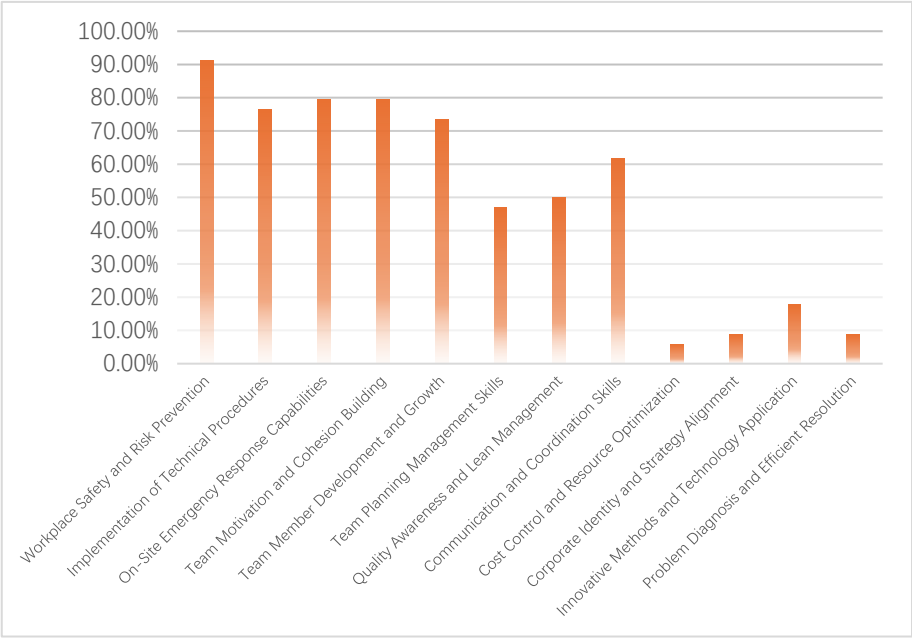

Fig. 2. Cognitive abilities possessed by excellent team leaders/assistant team leaders

Simultaneously, the data revealed another cluster of competencies with moderate to high recognition. As shown in Figure 3, at the project manager and chief engineer levels, "project schedule control," "engineering quality and safety oversight," "full-cycle project management coordination," cost budgeting control and optimization," and "personnel allocation and team motivation" generally garnered recognition rates between 60% and 88%. For team leaders, the demand for "team planning management capabilities" and "team building" aligns with this trend. These cross-functional competencies, emphasizing management and coordination of both tasks and people, collectively form the "comprehensive capability" metric.

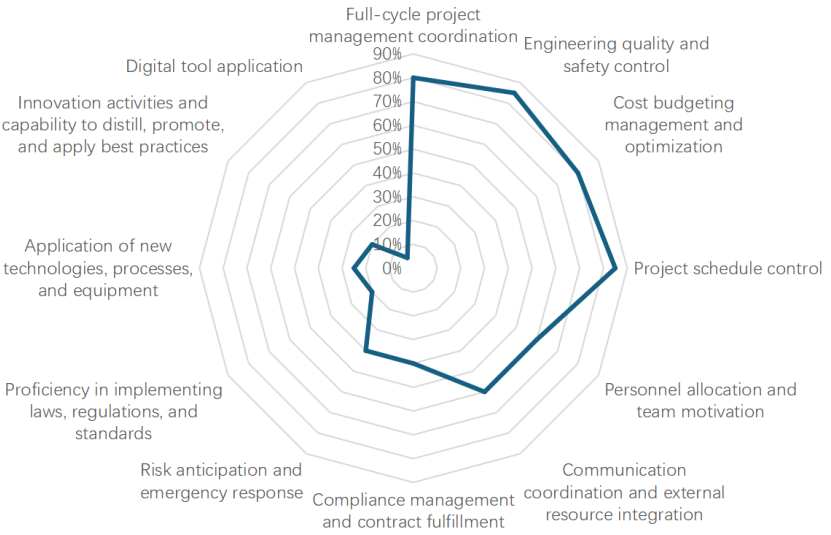

Fig. 3. The core qualities possessed by an excellent chief engineer of a project

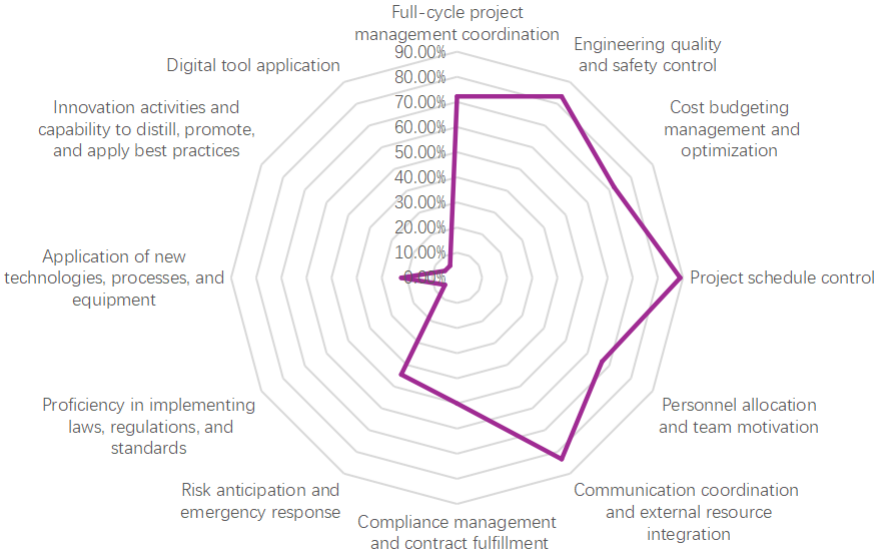

Fig. 4. The qualities that an excellent project manager should possess

Further analysis of data across all levels reveals a series of common weaknesses with extremely low recognition rates. For instance, as shown in Figure 4, awareness of "Innovative Method and Technology Application" and "Digital Tool Application Capability" did not exceed 32.35% across any of the three levels. Among team leaders, recog-

nition for "Cost Control and Resource Optimization" and "Corporate Identity and Strategy Communication" was even lower than 9%. These universally overlooked competencies stem from deeper deficiencies in mindset, intrinsic motivation, and forward-looking vision. This project establishes individual traits as a key indicator to make up for the lack of attention to potential and literacy in the current model.

Through frequency statistics and inductive analysis of survey results (items selected by ≥50% of respondents at each level were adopted), we anchored the core competency competencies for each level (as shown in the Table 1), providing robust data support for constructing the competency model.

Table 1. Core competency and literacy required for each excellent level

Tier	Core Competencies
Team Leader/Assistant Team Leader	Work Safety and Risk Prevention Professional Technical Procedure Execution On-site Emergency Response Capability Team Motivation and Cohesion Building Team Member Development and Growth Team Planning Management Capability Quality Awareness and Lean Management Communication and Coordination Skills
Chief Engineer	Full-Cycle Project Management Coordination of Engineering Quality and Safety Control Cost Budget Management and Optimization Project Schedule Control Personnel Allocation and Team Motivation Communication Coordination and External Resource Integration
Project Manager	Full-cycle project management, coordinating engineering quality and safety, controlling costs, budget management and optimization Project Schedule Management Personnel Allocation and Team Motivation Communication Coordination and External Resource Integration Compliance Management and Contract Execution

Building upon the established core competencies at each level, the project team conducted in-depth analysis of behavioral event interview transcripts and held multiple expert panel discussions. Through systematic categorization, consolidation, and refinement of these competency elements, they mapped them systematically across the three dimensions of the Iceberg Model, transforming them into actionable and measurable secondary indicators. The Table 2 presents the competency framework across three hierarchical levels.

Table 2. Competency models at all levels

Level	Level 1 Indicators	Second-Level Indicators
Team Leader/Assistant Team Leader	Comprehensive Capabilities	Execution, Communication & Coordination, Teamwork, Learning Ability, Problem Solving, On-Site Leadership

Level	Level 1 Indicators	Second-Level Indicators
Chief Engineer	Professional Competency	Safety Protocol Implementation, Process Standard Mastery, Equipment Operation & Maintenance, Blueprint Reading, Quality Self-Inspection, Risk Identification & Reporting
	Personal Traits	Sense of Responsibility, Safety Awareness, Meticulousness, Exemplary Role, Principled Approach, Team Cohesion
	Comprehensive Capabilities	Technical coordination, technical guidance, analytical judgment, technical learning, innovative application, written communication
	Professional Competencies	Construction Technology Management, Construction Drawing Review and Briefing, Technical Proposal Development and Optimization, Quality Standard Oversight, Application of New Technologies/Processes, Cost Control Awareness
	Personal Traits	Rigorousness, Principled Approach, Technical Diligence, Quality Orientation, Risk Anticipation, Integrity and Self-Discipline
	Comprehensive Capabilities	Resource integration, decision-making, organizational leadership, communication and negotiation, risk management, strategic understanding
Project Manager	Professional Competencies	Full-cycle project management, contract management and fulfillment, operations and cost control, safety and quality system management, compliance and audit oversight, supply chain management
	Personal Traits	Big-picture perspective, achievement orientation, resilience under pressure, customer relationship focus, influence, integrity and self-discipline

3.2.3 Competency Coding Dictionary. The Competency Coding Dictionary contains competency names, definitions, strength levels, and behavioral descriptions for each grade, providing a standardized coding framework for constructing infrastructure talent competency models. This project identified competencies suitable for Company A's infrastructure talent through two approaches: literature analysis and job responsibility analysis.

To ensure scientific rigor, the project refined the initial coding dictionary through supplementary competency feature development and optimized behavioral event interviews. First, aligning with regulations like the "Electric Power Construction Safety Work Procedures," the project calibrated definitions and level classifications based on infrastructure's "Six Precisions and Four Modernizations" requirements and core operational competency practices. Subsequent interviews specified behavioral manifestations for competencies at each level—for instance, the level-specific behaviors for "practical skills" among frontline technicians must align with critical process operation standards. Finally, interview transcripts were used to refine dictionary details, ensuring the coding dictionary fully supports the company's "full-cycle, systematic" infrastructure talent development needs.

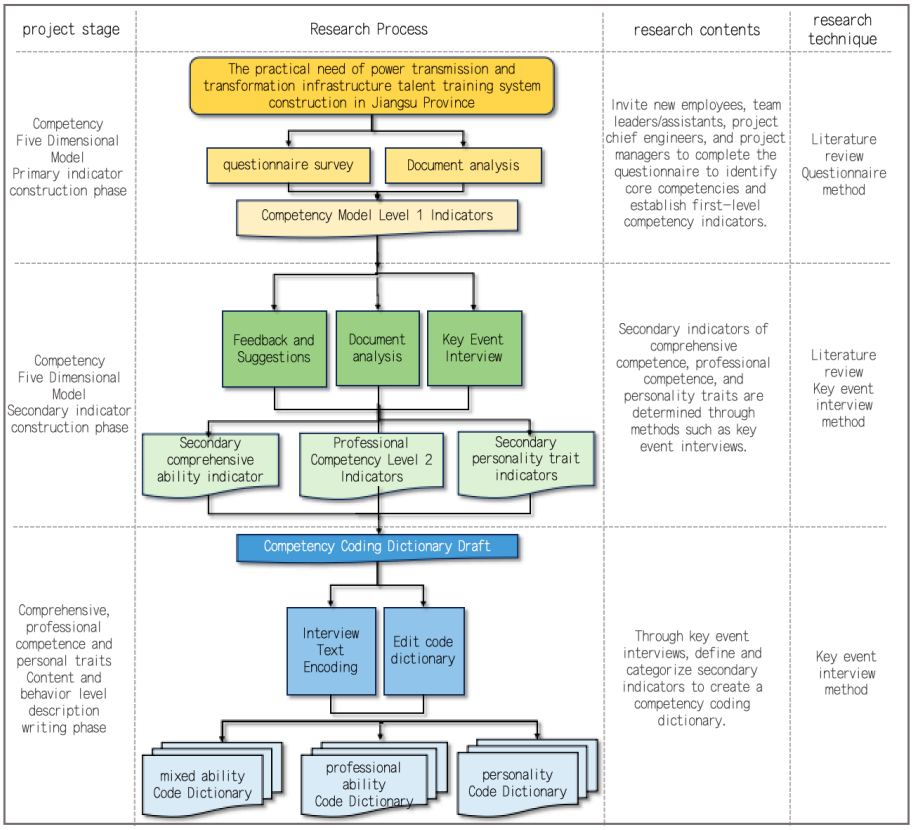

Fig. 5. Technology Roadmap

3.3 Interview Design

3.3.1 Interview Subjects. Interviews will focus on groups capable of closely observing employees engaged in Company A's core business operations and those responsible for daily work behaviors, such as branch managers and senior project specialists. Additionally, to ensure the constructed competency model aligns with the company's strategic

direction and management requirements, the project will also invite relevant personnel from functional departments such as Human Resources and the Integrated Service Center to participate in interviews, providing valuable input from different perspectives.

3.3.2 Data Analysis. Following each interview, content analysis will be applied. Interview recordings will be transcribed verbatim, with the text coded and categorized to identify recurring key behaviors and competency elements. These will be distilled into core competency factors. Finally, all interview data will be analyzed against the preliminary model, cross-validating and continuously refining the competency model and coding dictionary. As shown in Figure 5, the following is the technical roadmap of this study.

4 Application of the Competency Model at Company A

4.1 Comprehensive Capabilities Module

The Comprehensive Capabilities module focuses on enhancing the overall competence of infrastructure professionals. It covers core dimensions such as leadership, organizational execution, and communication/collaboration, aiming to strengthen talent's ability to collaborate across roles and domains. The curriculum emphasizes both high-level capability development—such as strategic thinking and change management—and practical skill training—including goal management and communication techniques. This empowers professionals at various levels to transcend their capability boundaries, laying the foundation for building a high-caliber, versatile infrastructure talent pool for the company. Table 3 has designed relevant courses from the perspective of comprehensive ability cultivation.

Table 3. Comprehensive ability course module

Secondary Category	Corresponding Course/Content
Leadership	Corporate Culture Development, Strategic Understanding and Execution, Decision Analysis Tool Application, Risk Analysis and Prevention, Customer Satisfaction Management, Benchmarking Management: Innovation and Breakthrough, Driving Leadership: The Art of Change Promotion, The Path of Change: Enterprise Change Management, Economic Situation Assessment and Business Analysis, Shaping an Exceptional Corporate Culture, Leadership Charisma and Leadership Artistry
Organization & Execution	Efficient Organizational Planning Management, Goal Management, Building Team Execution Capability, Organizational and Driving Capabilities for Leaders, Resource Integration and New Business Development

Secondary Category	Corresponding Course/Content
Communication and Collaboration	360-Degree Communication Skills, EQ and Communication Artistry, Know Thyself and Others: Leadership Communication Strategies, Cross-Departmental Communication and Coordination Techniques, Conflict Management Techniques Temperament and Personality Management: Understanding People and Utilizing Talent
Thinking and Innovation	Innovative Thinking, Innovation Promotion Techniques, Cultivating Corporate Innovation Culture, Systems Thinking and Logical Reasoning, Whole-Brain Thinking: Problem Analysis, Resolution, and Decision-Making, Practical Application of Pyramid Thinking
Learning and Development	PBL Learning Techniques in Practice, Managerial Career Planning and Development, Five Disciplines for Lifelong Learning
Communication & Writing	Official Document Writing Techniques, Specialized Material Drafting Skills, Mastering Verbal Expression, Structured Communication Techniques, The Art of Eloquent Speech, The Charisma of Leadership Addressing
Emotional & Stress Management	Sunshine Mindset: Stress Relief and Emotional Management, Reshaping Your Mental Models, Accumulating Psychological Capital for Executives, Character Determines Destiny, Techniques for Managers to Combat Burnout

4.2 Professional Competency Module

The Professional Competency Module is grounded in core infrastructure business scenarios, building a curriculum system tailored to frontline construction and project management realities. Course content encompasses foundational knowledge in power grid construction, operation, maintenance, and inspection, while intensifying practical skill training in "Five New Technologies" application and full-cycle project management. It deeply integrates regulatory requirements such as the "Electric Power Construction Safety Work Procedures" and the "Notice on Further Clarifying Basic Qualification Requirements for Typical Positions at All Levels of Provincial Company A Co., Ltd." This ensures precise alignment of talent competencies with operational demands in infrastructure construction, safety control, and technological innovation, driving the restoration and enhancement of core operational capabilities. Table 4 presents relevant courses designed from the perspective of professional competence development.

Table 4. Professional Skills Course Module

Level 2 Category	Corresponding Course/Content
Power Engineering Fundamentals	13 professional modules including power grid planning, grid construction, operation and maintenance, marketing services, technology and information communication, safety production, material management, human resources, financial management, legal affairs and auditing, tax planning, Party building, and comprehensive management
Project Management and Execution	Mastering Project Management Tasks, Goal Management, Resource Tapping and Allocation Methods, Win-Win Negotiation Techniques for Resource Mutual Benefit, Full-Cycle Project Management, Contract Management and Performance
Technical Management	Drawing Review and Technical Briefing, Technical Proposal Development and Optimization, Application of "Five New" Technologies, Quality Standard Control
Safety and Quality	Safety Standard Implementation, Quality Self-Inspection, Risk Identification and Reporting, Safety and Quality System Management, Organizational Crisis Prevention and Management
Data and Informatization	Leveraging Data and Tools to Communicate Effectively, Internet Thinking and Big Data Applications, 5G+ Blockchain Industry Applications
Cost and Resource Control	Cost Control Awareness, Operations and Cost Management, Resource Integration and Utilization Methods

4.3 Personal Traits Module

The Personal Traits Module focuses on cultivating Party spirit, professional ethics, psychological capital, and behavioral conduct among infrastructure talent. Aligned with the core requirements for state-owned enterprise personnel—political integrity, exemplary conduct, and integrity—it helps individuals establish sound values and professional perspectives. The curriculum deeply integrates Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, Party Constitution, regulations, and discipline. It also aligns with the company's corporate culture and talent development orientation, strengthening the cultivation of professional ethics such as loyalty, responsibility, integrity, and accountability. It simultaneously enhances psychological adjustment and self-awareness, guiding infrastructure professionals to uphold their original aspirations and missions while forging robust work ethics during urgent, difficult, dangerous, and critical tasks. This provides a strong ideological foundation and personal integrity support for the company's high-quality development. Table 5 has designed relevant courses from the perspective of cultivating personal trait abilities.

Table 5. Personal trait course module

Secondary Category	Corresponding Course/Content
Party Spirit Cultivation	Five learning themes: Party history, Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, Party Constitution study, comprehensive strict governance over the Party, and rule of law
Ideals and Convictions	Inheriting the Red Gene, Ideological Responsibility System, Core Socialist Values, State Grid Corporate Culture, and other 5 learning themes
Moral Cultivation	Comprehensive Rule of Law, Company Law, Contract Law, Labor Law, Work Safety Law, Law-Based Enterprise Management, and Exemplary Role Models—11 learning themes in total
Integrity and Self-Discipline	Interpretation of the "Code of Conduct for Integrity and Self-Discipline of the Communist Party of China" and the "Regulations on Disciplinary Actions of the Communist Party of China," anti-corruption and integrity system construction, and other 9 learning themes
Professional Ethos	Loyalty and Mission Responsibility, Corporate Culture and Value Shaping, Essence of Chinese Classics, Huawei Culture, Responsibility Trumps Ability, and 12 other learning themes
Psychological and Behavioral Conduct	Courses on emotional management and self-awareness, including "Sunshine Mindset," "Mental Models," "Psychological Capital Accumulation," "Personality Analysis," and "Resilience Against Professional Burnout"

In summary, this curriculum system systematically constructs a talent development blueprint covering the entire lifecycle through the organic integration of three major modules: "Comprehensive Competence," "Professional Competence," and "Personal Traits." It precisely aligns with the core competency requirements across all levels and specialties of infrastructure operations, ensuring talent development resonates with corporate strategy and business needs. The establishment and implementation of this system will provide robust structural support for building a high-caliber infrastructure talent pool characterized by "political integrity, professional excellence, and exemplary conduct," continuously injecting powerful talent momentum into Company A's high-quality development. As shown in Figure 6, this study designed a "full cycle, systematic" infrastructure talent training curriculum system.

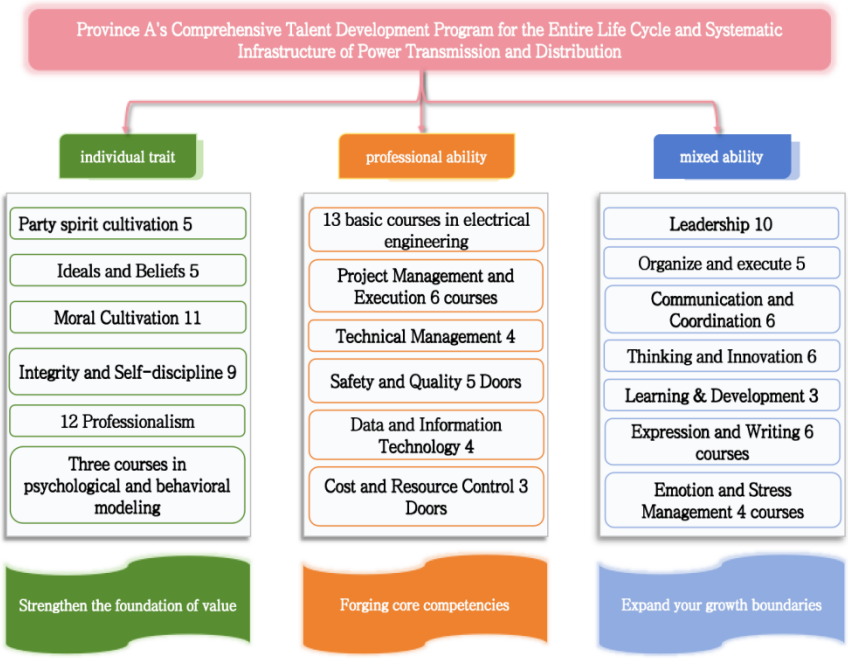

Fig. 6. "Full-cycle, systematic" infrastructure talent cultivation curriculum system diagram

5 Conclusion

This study is based on the higher requirements for infrastructure talents in the transformation of the new power system. It systematically explores and constructs a competency model for infrastructure talents applicable to Company A and its supporting training curriculum system. The project has established a three-dimensional model framework centered on "professional competence", "comprehensive competence", and "personal traits", which is deeply in line with the classic "iceberg model" theory, ensuring comprehensive coverage from surface skills to deep potential.

Based on this model, a "full cycle, systematic" curriculum system was further designed, which includes three modules: comprehensive ability, professional ability, and personal traits. This system not only accurately meets the core competency requirements of different levels of positions, from team leaders to project managers, but also deeply integrates national strategic orientation, enterprise system norms, and cultural values into the course content, achieving a close coupling between talent cultivation, organizational strategy, and business practice. In summary, this study provides a solid theoretical model and practical framework for A company to build a high-quality infrastructure talent team that is politically strong, professionally skilled, and has excellent work style. This system not only has pertinence and operability, but also has certain replicability and promotion value, which can provide useful reference for state-owned

enterprises facing similar transformation challenges, thus continuously injecting strong and stable talent momentum into the high-quality development journey of enterprises.

References

1. Han Xiangrong, Huang Xinxing. Research on Practice Exploration and Experience in Provincial New Power System Construction [J]. Science & Innovation, 2025(17):197-201, 205.
2. Central People's Government of the People's Republic of China. Xi Jinping Presides Over Second Meeting of Central Committee for Comprehensively Deepening Reform, Emphasizing: Build a New System for Higher-Level Open Economy and Promote Gradual Shift from Dual Control of Energy Consumption to Dual Control of Carbon Emissions [EB/OL]. [2025-03-12]. https://www.gov.cn/yaowen/liebiao/202307/content_6891167.htm.
3. Zhan, Xiaoxuan. Issues and Countermeasures in Cultivating Grassroots Talent for New Power Systems [J]. China Economic and Trade Guide, 2024(18):205-207.
4. Boyatzis. (2007). Competencies in the 21stCentury. Journal of Management Development (27(1), pp. 5-12.
5. Zhao Xiaokun, Mu Hanfei. Discussion on Optimizing Human Resource Management Based on Competency Models [C/OL]//Proceedings of the National Green Digital Intelligent Power Equipment Technology Innovation Achievement Exhibition (II). Beijing, China, [2025]:56-58[2025-11-03]. https://doi.org/10.26914/c.cnkihy.2024.026283 .
6. Yin, D. F. Research on Human Resource Management Based on Competency Models [J]. Shandong Social Sciences, 2013(6):187-189.
7. Hamid N, Saied S. Designing the competency model of human resource managers based on paradox theory (case study: information and communication technology industry) [J]. International Journal of Organizational Analysis, 2024, 32(7): 1181-1203. DOI: 10.1108/IJOA-02-2023-3645.
8. Y. Fajar Sitohang, "Competency evaluation of project manager performance in network construction projects," in Proceedings of the 2020 Fifth International Conference on Informatics and Computing (ICIC), pp. 1–8, Gorontalo, Indonesia, November 2020.
9. Whiddett, Steve., Hollyforde, Sarah (2000). The Competencies Handbook, London: Chartered Institute of Personnel and Development.
10. Wang Zhengxin. Research on the Training System for Commercial Bank Client Managers Based on the Competency Model [J]. Today's Wealth, 2025(20): 40–42.
11. Zhao, Xiao-Kun, and Mu, Han-Fei. Discussion on Optimizing Human Resource Management Based on Competency Models [C/OL]//Proceedings of the National Green Digital Intelligent Power Equipment Technology Innovation Achievement Exhibition (II). Beijing, China, [2025]:56-58[2025-11-03]. https://doi.org/10.26914/c.cnkihy.2024.026283 .
12. Gao Qijun. Construction of a Human Resource Management System Based on Competency Models [J]. Journal of Railway Engineering, 2025, 42(2):103-107.
13. Chi Baoyuan. Reconstruction of Employee Competency Models and Upgrading of Training Systems in Electric Power Enterprises Under Digital Transformation [C/OL]//Proceedings of the Forum on New Quality Productivity Driving Secondary Industry Development and Innovation in Tendering and Procurement (III). Beijing, China, [2025]:501-505[2025-11-03]. https://doi.org/10.26914/c.cnkihy.2025.030001 .
14. Boyatzis R E. The Competent Manager: A Model for Effective Performance[J]. John Wiley & Sons, Inc., 1982.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (http://creativecommons.org/licenses/by-nc/4.0/), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.