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DAFTAR PUSTAKA

[1] N. Loh, "Etm in cirebon: An analysis of indonesia's coal power paradox," Serangoon Energy Analysis, 2024, posted on August 20, 2024. [Online]. Available: https://serangoonenergy.com/2024/08/20/etm-in-cirebon-an-analysis-of-indonesias-coal-power-paradox/

[2] PT PLN (Persero), "Statistik pln 2024: Audited," PT PLN (Persero), 2024, dokumen resmi, versi Indonesia–Inggris. [Online]. Available: https://web.pln.co.id/statics/uploads/2025/07/Statistik-PLN-2024-Audited-Indo-Eng-Final-Compressed-update-sheet.pdf

[3] K. Kimura, T. Iwabuchi, K. Morooka, and Y. Ishikawa, "Assessment of remaining insulation life of high voltage induction motors," in *Proceedings of the 19th Electrical Electronics Insulation Conference,*, 1989, pp. 295–299.

[4] G. C. Stone, "Recent important changes in ieee motor and generator winding insulation diagnostic testing standards," *IEEE Transactions on Industry applications*, vol. 41, no. 1, pp. 91–100, 2005.

[5] S. Gopinath, K. Sathiyasekar, S. Padmanaban, and B. Chokkalingam, "Insulation condition assessment of high-voltage rotating machines using hybrid techniques," *IET Generation, Transmission & Distribution*, vol. 13, no. 2, pp. 171–180, 2019.

[6] Y. Ji, P. Giangrande, W. Zhao, V. Madonna, X. Zhang, H. Zhang, and M. Galea, "Partial discharge investigation under humidity conditions via dissipation factor and insulation capacitance tip-up test," *IEEE Transactions on Dielectrics and Electrical Insulation*, vol. 29, no. 4, pp. 1483–1490, 2022.

[7] I. A. Pasaribu, M. N. Pertiwi, F. I. Habib, and D. J. Sinaga, "Analisis hasil pengujian tahanan isolasi (ir) dan polarization index (pi) pada motor induksi tiga fasa 6 kv sistem circulating water pump (cwp) di pltgu pt pln nusantara power unit pembangkitan," *Jurnal Inovasi Pembelajaran Progresif*, vol. 6, no. 4, 2025.

[8] L. S. Mahendra, B. H. Zulkifli, B. Herwono, Y. Anggraini, E. N. Sholikha, and K. Nisa, "Analisis kondisi belitan stator generator melalui pengujian indeks polarisasi dan tan delta (dissipation factor)," *Jurnal Teknik Elektro dan Komputasi (ELKOM)*, vol. 5, no. 2, pp. 244–251, 2023.

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[9] N. Pattanadech and S. Jeenmuang, "Condition assessment of rotating machine insulation: Case studies from power plants," in *2024 International Conference on Diagnostics in Electrical Engineering (Diagnostika)*. IEEE, 2024, pp. 01–06.

[10] H. Waloeyo, *Buku Saku Prakerin*. Rembang: PT PLN Nusantara Power UP Rembang, 2023.

[11] L. Xia, D. Liu, L. Zhou, F. Wang, and P. Wang, "Optimal number of circulating water pumps in a nuclear power plant," *Nuclear Engineering and Design*, vol. 288, pp. 35–41, 2015. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S0029549315001235

[12] PT PLN (Persero) Jasa Manajemen Konstruksi, "Pltu indramayu 3 x 330 mw," 2009, dokumen internal perusahaan.

[13] A. W. Pramono, G. P. Artiani, and A. Laksono, "Analisa pengaruh jumlah pengoperasian cwp terhadap performa kondensor pltu rembang," *Power Plant*, vol. 3, no. 1, pp. 1–4, 2015.

[14] V. M. Hernández-Guzmán and R. Silva-Ortigoza, "Velocity control of a permanent magnet brushed direct current motor," *Advanced Textbooks in Control and Signal Processing*, p. 605 – 644, 2019, cited by: 2. [Online]. Available: https://www.scopus.com/inward/record.uri?eid=2-s2.0-85054176846&doi=10.1007%2f978-3-319-75804-6_10&partnerID=40&md5=6746a9566fe29d5ad935653acb5b8a6a

[15] Kelistrikanku, "Perbedaan listrik 1 phase dan 3 phase," 2022, diakses pada: 9 Februai 2026. [Online]. Available: https://www.kelistrikanku.com/2022/07/1-phase-3-phase.html

[16] B. L. Theraja, "8. 3-ph im v1 pdf based on bl theraja," https://www.slideshare.net/slideshow/8-3-ph-im_v1-pdf-based-on-bl-theraja/273899773, n.d., diakses: 2026.

[17] NIT, "Chapter 34: Induction motor," https://nit-edu.org/wp-content/uploads/2021/09/Ch-34-Induction-motor.pdf, 2021, diakses pada 8 Maret 2026.

[18] Testbook, "What is the working principle of a 3-phase squirrel cage induction motor?" n.d., accessed: 2026-02-09. [Online]. Available: https://testbook.com/question-answer/what-is-the-working-principle-of-a-3-phase-squirre--61d94716e2642ba3b8345121

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[19] "Ieee recommended practice for electric power distribution for industrial plants (ieee red book)," *ANSI/IEEE Std 141-1986*, pp. 1–609, 1986.

[20] VIOX Electric, "Low vs medium vs high voltage classification guide," https://viox.com/low-vs-medium-vs-high-voltage-classification-guide/, 2024, accessed: 2025.

[21] TMEIC, "Medium voltage motors," https://www.tmeic.co.jp/product/catalog/D-0024-2404-B.pdf, 2024, accessed: 2026-02-09.

[22] B. Kim, "Fundamentals of mv motors," in *Proceedings of the 47th Turbomachinery & 34th Pump Symposium*. Houston, Texas, USA: Texas A&M University, 2018, presentation material.

[23] S. Kenjo, K. Morita, and E. Tsunashima, "Newly developed insulation system for large type dc motors," in *1979 EIC 14th Electrical/Electronics Insulation Conference*, 1979, pp. 86–89.

[24] N. Frost, M. Winkeler, and S. Tuckwell, "Mica tape and vpi resin insulation system options for medium voltage applications - further studies," in *2014 IEEE Electrical Insulation Conference (EIC)*, 2014, pp. 416–420.

[25] D. Lenko, S. Schlögl, S. Bichler, G. Lemesch, F. Ramsauer, W. Ladstätter, J. Rosc, and W. Kern, "New approaches towards the investigation on defects and failure mechanisms of insulating composites used in high voltage applications," *Composites Part B: Engineering*, vol. 58, pp. 83–90, 2014. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S1359836813005933

[26] A. Bhatia, "Understanding motor nameplate information: Nema vs. iec standards," *Continuing Education and Development Inc*, 2022.

[27] P. Velayutham and F. B. Ismail, "A review on power plant maintenance and operational performance," in *MATEC web of conferences*, vol. 225. EDP Sciences, 2018, p. 05003.

[28] R. K. Mobley, *Maintenance fundamentals*. Elsevier, 2011.

[29] G. Wijoyo, "Justifikasi overhaul simple inspection (si)/minor untuk meningkatkan equivalen availability factor (eaf) pt pembangkit listrik xyz, studi kasus pada steam turbine 1.0 (st 1.0)," Ph.D. dissertation, Institut Teknologi Sepuluh Nopember, 2019.

[30] *IEEE Recommended Practice for Testing Insulation Resistance of Electric Machinery*, IEEE Std., revision of IEEE Std 43-2000.

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[31] K. Suzuki, H. Sako, S. Maeda, and K. Mio, "Temperature dependence of insulation resistance and current components for generator stator bars," in *2016 IEEE Electrical Insulation Conference (EIC)*. IEEE, 2016, pp. 452–455.

[32] S. Ridho, "Analisis tahanan isolasi transformator tenaga unit 6 60 mva pada pemeliharaan shutdown measurement di pt pln (persero) gardu induk 150 kv manisrejo madiun," Yogyakarta, 2024.

[33] Teknik Elektronika. (2022) Pengertian dielektrik dan bahan dielektrik. [Online]. Available: https://teknikelektronika.com/pengertian-dielektrik-dielectric-bahan-dielektrik/

[34] Megger, "A guide to diagnostic insulation testing above 1 kv," Megger Limited, 2021, technical guide. [Online]. Available: https://megger.widen.net/s/bltsw2bkrt/above-1kv_insulationguide_br_en

[35] R. Omranipour and S. U. Haq, "How critical are iec 60034-27-3 maximum values for dielectric dissipation factor and tip-up to determine the reliability of motor stator insulation?" in *2015 IEEE Electrical Insulation Conference (EIC)*. IEEE, 2015, pp. 364–368.

[36] "Ieee recommended practice for measurement of power factor tip-up of electric machinery stator coil insulation," *IEEE Std 286-2024 (Revision of IEEE Std 286-2000)*, pp. 1–44, 2024.

[37] I. Culbert, "Motor maintenance testing & diagnostics on-line, off-line," in *Conference Record of 2009 Annual Pulp and Paper Industry Technical Conference*. IEEE, 2009, pp. 1–10.

[38] "Vde 0530 part 1: Rotating electrical machines," VDE Verband der Elektrotechnik, Germany, Standard VDE 0530 Part 1/11.72, 1972.

[39] Megger, "Mit515, mit525, mit1025, mit1525 5 kv, 10 kv, 15 kv dc insulation resistance testers," Megger Limited, 2021, data sheet. [Online]. Available: https://www.megger.com/en-gb/products/advanced-5-kv-10-kv-and-15-kv-insulation-resistance-testers

[40] Omicron, "Primary test manager testing and management software for medium- and high-voltage assets," Omicron Energy, 2024, user Manual. [Online]. Available: https://www.omicronenergy.com/en/products/primary-test-manager-ptm/

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Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

[41] Omicron, "Testrano 600 user manual," Omicron Energy, 2024, user Manual. [Online]. Available: https://www.omicronenergy.com/en/products/testrano-600/

[42] Omicron, "Cp td 1 reference manual," Omicron Energy, 2024, user Manual. [Online]. Available: https://www.omicronenergy.com/en/products/cp-td1/

[43] Omicron, "Cp cr 500 user manual," Omicron Energy, 2024, user Manual. [Online]. Available: https://www.omicronenergy.com/en/products/cp-cr-500/

[44] HP Inc., "Hp probook 450 15.6 inch g9 notebook pc specifications," 2022, accessed: 9 May 2026. [Online]. Available: https://support.hp.com/us-en/document/ish_5999155-5999207-16

[45] PT PLN (Persero) JASA DIKLAT UNIT PENDIDIKAN DAN PELATIHAN SURALAYA, "Prosedur overhaul motor," 1997, dokumen internal perusahaan.

[46] R. Afshari, A. Ahmadi Nadi, A. Johannssen, N. Chukhrova, and K. P. Tran, "The effects of measurement errors on estimating and assessing the multivariate process capability with imprecise characteristic," *Computers & Industrial Engineering*, vol. 172, p. 108563, 2022. [Online]. Available: https://www.sciencedirect.com/science/article/pii/S0360835222005666

[47] D. Sulastri, I. A. Darmawan *et al.*, "Pengujian elektrik motor induksi 3 phase rotor sangkar 75 kw di pt mesindo tekninesia," *TESLA: Jurnal Teknik Elektro*, vol. 24, no. 1, pp. 47–55, 2022.