

# VGB PowerTech

## KKS Application Explanations for Hydro Power Plants

VGB-B106 D1

**Issued by:**  
VGB PowerTech e.V.

**Obtainable from:**  
VGB PowerTech Service GmbH  
Verlag technisch-wissenschaftlicher Schriften  
Postbox 10 39 32, 45039 Essen  
Phone: +49 201 8128-200  
Fax: +49 201 8128-329  
E-Mail: mark@vgb.org

<http://www.vgb.org>

No part of this publication may be reproduced  
in any form without prior permission of VGB.





## Preface

The plant identification rules (guidelines, keys, and application explanations), edited by VGB Power Tech as part of the Identification System for Power Stations (KKS), leave room for different ways of identification to meet the requirements of the various engineering disciplines including that of hydroelectric power plants. Identification standard DIN 6779 part 10 includes these rooms as well in order to allow different users and power stations to make use of these rules.

In the past clear definitions were mostly made individually by each user.

For a company-spanning uniform identification of hydro power plants, the VDI/VDE-GMA Technical Committee on “Systematic of Identification in Hydroelectric Power Plants” started preparing the present Application Explanations. The wide experience, which was worked into the draft, was basically contributed by owners/operators, manufacturers, and engineers of appropriate power stations. For specific statements a previous compendium of Messrs. Gabo could be consulted.

A task force of the VGB Working Committee on “Reference Designation and Plant Documentation” coached the work, finally took up the job and completed it. The parties involved in the completion of the “KKS Application Explanations for Hydro Power Plants” have been:

Dipl.-Ing. H. Asam	RMD - Consult GmbH, München
Dipl.-Ing. Dr. K. Dorfmeister	VERBUND - Austrian Hydro Power AG, Wien
Dipl.-Ing. J. Mehrens	VA TECH ESCHER WYSS GmbH, Ravensburg
Dipl.-Ing. D.-K. Möller	Vattenfall Europe Generation AG & Co. KG, Hohenwarte
Dipl.-Ing. H. Müller	Siemens AG, Erlangen
Dipl.-Ing. M. Schlegel	VA TECH ESCHER WYSS GmbH, Ravensburg
Dipl.-Ing. J. Schwenk	Voith Siemens Hydro Kraftwerkstechnik GmbH, Heidenheim
Dipl.-Ing. J. Kaiser	VGB - Geschäftsstelle, Essen

VGB thanks all companies involved in drawing up these Application Explanations and their staff in charge with the work.

Essen, in May 2005

VGB PowerTech e.V.



**Contents**

<b>1</b>	<b>Purpose and Fields of Application.....</b>	<b>7</b>
<b>2</b>	<b>Overview of Code Block.....</b>	<b>8</b>
<b>3</b>	<b>Interdisciplinary correlation/ site code (#).....</b>	<b>9</b>
<b>4</b>	<b>Process-related code/ plant code (=) .....</b>	<b>10</b>
4.1	General.....	10
4.1.1	Format of code.....	10
4.1.2	Notation of codes.....	10
4.2	Breakdown level 1.....	11
4.2.1	Identification of machine sets (M_).....	15
4.2.2	Identification of hydraulic main systems (L_ _).....	30
4.2.3	Identification of other mechanical systems and equipment.....	36
4.2.4	Identification in electrical engineering.....	40
4.2.5	Identificacion in control and instrumentation engineering (C_ _) .....	46
4.2.6	Identification in civil engineering.....	48
4.3	Breakdown level 2.....	48
4.3.1	Identification of subassemblies of the machinery (H_ ) .....	48
4.3.2	Identification of valves (AA), pipings (BR) and further mechanical equipment ...	49
4.3.3	Identification of electrical equipment (G_ ) .....	51
4.3.4	Identification of measuring circuits (C_ ), with the exception of electrical variables .....	55
<b>5</b>	<b>Component code (-).....</b>	<b>57</b>
<b>6</b>	<b>Signal Code and Signal Application (;).....</b>	<b>57</b>
6.1	General Information .....	57
6.2	Format of code.....	58
6.3	Signal origin identification .....	59
6.4	Signal application code .....	60
<b>7</b>	<b>Functional allocation (==) .....</b>	<b>62</b>
<b>8</b>	<b>Point of installation code (+).....</b>	<b>65</b>
<b>9</b>	<b>Location code (++).....</b>	<b>66</b>

10	Connection code (:)	66
11	Document type code (&)	66
	Appendix	68