



European Network of
Transmission System Operators
for Electricity

COMPLIANCE AUDIT REPORT AMPRION

27. – 28.10.2010

**COMPLIANCE AUDIT CONDUCTED IN BRAUWEILER BY
THE ENTSO-E RG CE SG COMPLIANCE MONITORING &
ENFORCEMENT
AT THE CONTROL CENTRE OF THE ENTSO-E MEMBER
TSO AMPRION**

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1 EXECUTIVE SUMMARY

1.1 COMPLIANCE MONITORING IN ENTSO-E RGCE

The mission of the Regional Group Continental Europe (RGCE) is to improve the reliability and security of the interconnected power system in the continental part of Europe through developing and enforcing Operation Handbook standards, monitoring the interconnected power system and assessing its future adequacy. The RGCE member TSOs are subject to compliance with all approved Operation Handbook (OH) standards. The Compliance Monitoring Program (CMP) is the RGCE program that monitors and assesses compliance with these standards via:

- the yearly processes of self-assessment, which is applied to all TSOs, as well as
- the yearly process of mandatory on-site Compliance Audits, which is applied to a certain number of TSOs chosen on a rotating base either directly (in case of doubts that a certain TSO complies with OH Standards) or by random.

SG Compliance Monitoring & Enforcement (SG CME) is in charge of performing these processes.

The year 2010 is the first year of conducting mandatory Compliance Audits. Before this, in 2008 and 2009 Voluntary Compliance Audits have been performed at altogether 4 volunteering TSOs. Through this, the SG CME gained first experiences with this kind of process.

1.2 AUDITED TSO

The RGCE member TSO Amprion was chosen for a Compliance Audit in 2010. SG CME conducted the audit on 27-28th of October in 2010 at the control centre of Amprion in Brauweiler.

1.3 AUDITED OH STANDARDS

The Compliance Audit encompassed all 14 standards of Operation Handbook Policy 8 which is related to operational training of dispatchers. In 2009 Amprion made 14 compliance declarations in the self-assessment process.

Amprion declared full compliance with the following standards:

- P8-A-R1, P8-A-R2, P8-A-R3, P8-A-R4, P8-A-S1, P8-A-S2, P8-B-R1, P8-C-S1, P8-C-S2, P8-C-S3, P8-C-S4, P8-C-S5, P8-C-S6

Amprion declared sufficient compliance with the following standards:

- P8-B-S1

Amprion declared non compliance with the following standards:

- None

1.4 AMPRION APPROACH TO THE AUDIT

The representatives of Amprion were well prepared for the audit. All the necessary documentation was available and extremely well organised. The most of the relevant documents have been translated into English only for the purpose of the on-site audit. The representatives of Amprion clearly demonstrated that they are familiarized with the content of every single document. The Audit Team particularly wishes to stress the easiness and quickness with which all required evidences were presented and explained.

A visit to the Amprion control room helped the Audit Team members to better understand the processes implemented at Amprion and the explanations given by the Amprion representatives later on.

In the beginning of the audit the representatives of Amprion presented the organisation of Amprion, how the grid looks like and where it is interconnected, and the general policies of Amprion related to the implementation of the OH standards, especially Policy 8, and to internal organizational aspects which are of importance for achieving and/or maintaining compliance.

The readiness of the Amprion representatives to explain and discuss openly all subjects covering Policy 8 and beyond contributed to convince the Audit Team members that the compliance declarations of Amprion are correct and based on sound reasoning.

1.5 RESULTS

The Audit Team found that the evidences presented by Amprion during the audit were excellent and well documented and that Amprion is fully compliant in case of 14 out of 14 investigated OH requirements and standards. For the standard P8-B-S1 "Common training" Amprion declared in 2009 to be sufficiently compliant, an improvement plan and deadline being provided. Based on shown evidences, the audit team proposed to increase the compliance level declared for this standard from sufficiently compliant to fully compliant.

In order to better keep track of successive versions for all training documents, the Audit team suggested to Amprion to attach a table of revisions to all training documents containing information on author, revision date and a short description of the revision. Amprion accepted this view and committed itself to realize the proposed measures.

2 AUDIT REPRESENTATIVES

2.1 CME AUDIT TEAM STRUCTURE

The Audit Team has the task to prepare and perform the Compliance Audit as well as to write the corresponding Audit Report. The Audit Team consists of the following members:

- Audit Team Leader – a member of the SG CME not belonging to the audited TSO and its neighbouring TSOs
- Up to two Control Area Managers (CAMs) or members of the SG Coordinated System Operation (CSO) excluding the CAM and representatives of the audited TSO as well as those of the neighbouring TSOs
- Two members of the SG CME not belonging to the audited TSO and its neighbouring TSOs
- One observer/supporter from the ENTSO-E Secretariat.

In this particular case the Compliance Audit was conducted without participation of a Control Area Manager or a member of the WG CSO.

2.2 CME AUDIT TEAM FOR AMPRION

Audit Role	Team	Name	Role in the Compliance Audit Process	Company (TSO) or ENTSO-E
AT Leader		Gorazd Sitar	Member of the SG CME	ELES
AT Member		Yiannis Tolia	Member of the SG CME	HTSO
AT Member		Octavia Unguroiu	Member of the SG CME	Transelectrica
AT Member		Djordje Dobrijevic	Member of the SG CME	CGES
AT Member		Lasse Konttinen	Compliance Monitoring Advisor	ENTSO-E Secretariat

A TSO subject to an audit may object any member of the Audit Team on grounds of a conflict of interests or the existence of other circumstances that could interfere with the impartial performance of his or her duties. The audited TSO is obligated to express its concerns with the proposed team member prior to the team's arrival on-site. Amprion didn't make any such objection.

2.3 AMPRION AUDIT STAFF

Name	Function at Amprion
Michael Rogge	Senior Manager System Operation
Christoph Schneiders	Consultant to Vice President, Transmission System Operation
Michael Heinz	Consulting Engineer, Back Office Main Control Centre
Heinz-Dieter Ziesemann	Manager Main Control Centre

An initial letter and an audit schedule were sent to Amprion on 30th of June in 2010. This letter included an audit questionnaire. Amprion submitted the completed audit questionnaire on 13th of October in 2010. They didn't require any explanations related to the audit questionnaire and other material received from the Audit Team.

A reminder and the first draft of the Compliance Audit Report containing the general layout of the report text and the methodology of the Compliance Audit were sent to Amprion on 25th of October in 2010.

3 AUDIT PLAN

3.1 OBJECTIVES

In 2010 the objective of Compliance Audits is to check all 14 RGCE OH standards of Policy 8. These standards were also monitored in the 2009 regular process via the self-assessments.

Furthermore, at performing the Compliance Audit the Audit Team makes recommendations to the audited TSO so as to enhance the evidence or documentation on compliance with the audited OH standards.

3.2 SCOPE

The scope of a compliance audit encompasses:

- issues which are directly related to the compliance of the audited TSO with the audited RGCE OH standards
- issues which make a general background for the implementation of the OH at the audited TSO

Directly related issues

Issues directly related to the audited RGCE OH standards are the following:

- Existence of TSO's addenda and/or non-compliance declarations/non-compliance self-reports
- Follow-up of the TSO's mitigation plans to remove the declared non-compliances
- 2009 self-assessment questionnaires stored at the ENTSO-E Secretariat related to Amprion concerning the audited OH standards
- Information and explanations which the Audit Team receives on site
- Implementation of the knowledge of the audited OH standards in the training of dispatchers and operators

General background

The Compliance Audit also encompasses issues of general nature listed below:

- Reference system of rules existing at the audited TSO: general policies of Amprion, related set of rules and procedures for the control centre(s) of Amprion
- Procedures to control the application of the audited OH standards and their follow-up
- Procedures to improve the compliance with the audited OH standards
- Existence of any TSO's internal report related to the implementation of the audited OH standards
- Existence of TSO's internal audits and/or documentation concerning implementation of OH standards
- Existence of TSO's internal bodies (forums, panels) for the implementation of the OH standards

3.3 METHODOLOGY

The SG CME prepared an audit schedule defining the chronological order of the compliance audit, which Amprion accepted without comment.

The Audit Team reviewed the existing material on Amprion and its neighbouring TSOs already collected through the self-assessment process in the 2009 self-assessment questionnaires. It also inspected the answers in the 2010 audit questionnaire filled in by Amprion.

The methodology includes audit criteria and expectations based on best practices. The criteria are objective, measurable (if possible), complete and relevant to the objectives. At defining the audit

methodology the auditors identify the potential sources of audit evidence and estimate the amount and type of evidence needed.

The Audit Team used an Audit Worksheet (AW) (see chapter 4) for reviewing the audited OH standards. The purpose of the AW is to help to ensure consistency and fairness. By using the AW the Audit Team documented the material reviewed and the observations made.

As Amprion declared full compliance and sufficient compliance for the most of the audited OH standards, the Audit Team communicated to the Amprion Control Area Manager all evidences of possible deviation from this assessment.

In fact, one of the main reasons for an on-site visit is to review the existing documentation and to interview the staff. Thus, the auditors obtain "objective evidence" which support (or not) the self-assessed claims of the audited TSO. The audit team determine whether the evidence presented by the TSO is sufficient. They do this by assessing the relevance, validity and reliability of the information and documentation presented.

It is the responsibility of the audited TSO to provide evidence of compliance with all audited OH standards.

In most cases the evidence is in written form like documents, plans, programs or records. In some cases the evidence is a review of computerized records or additional supporting material provided at interviews with the staff of the audited TSO.

3.4 EVALUATION PRINCIPLES

The evaluation principles of the audit at Amprion were the following:

Preparatory phase:

- Inspecting the exact wording of each audited OH standard and of additional questions formulated by the SG CME
- Identification of documents and other material the TSO has to present to the auditors in order to demonstrate its full compliance with each OH standard
- Identification of remaining discrepancies (inconsistencies) with neighbouring TSOs (by considering the answers of the latter in the 2009 self-assessment questionnaires concerning their relationship to Amprion)
- Analysing the explanations/comments Amprion made in the 2009 self-assessment and 2010 audit questionnaires by using a marking system (see below) in order to evaluate the quality of explanations/comments in general
- Determining to which needed documents and other material an explanation/comment is actually given (this equals to the identification of the missing explanations)
- Inventorying of the evidences i.e. of the reference documents Amprion stated in the 2009 self-assessment and 2010 audit questionnaires by using a marking system (see below) in order to evaluate the quality of statements (not of evidences themselves, because the Audit Team will see them only during the audit)
- Analysing the quality of mitigation plans and improvement plans Amprion stated in Addenda (if existing), and in 2009 self-assessment and 2010 audit questionnaire in case of non compliance and sufficient compliance

Audit phase:

- Demanding from Amprion to give additional explanations, especially related to documents and other material which were not or not fully addressed by documents and other material mentioned in the 2009 self-assessment and 2010 audit questionnaire
 - the goal is to heighten the quality of explanations to the highest mark of the marking system (if possible i.e. if Amprion is able to give adequate explanations)
- Demanding from Amprion to present that evidence and, if necessary, additional evidence, in printed or electronic form

- o the goal is again to heighten the quality of evidence to the highest mark of the marking system (if possible i.e. if Amprion is able to present relevant documents or other material)
- o this can be achieved by determining whether the presented material is relevant to the audited OH standard at all,
- o by remarking the titles of all presented documents, their relevant chapters and even relevant passages extracted from them as well as
- o by writing down explanations related to the presented material

The results of the preparatory and audit phase are given in chapter 4. In the following a description of the marking system is given:

Quality of explanation (it is always applied to the entirety of stipulations of an OH standard and to additional questions formulated by the SG CME):

Missing = TSO **doesn't give any explanation.**

e = TSO gives only a **short explanation** which is mostly **only (slightly) related to the stipulations of the OH standard**, but not also to the additional questions in the 2009 self-assessment questionnaire and 2010 audit questionnaire.

d = TSO gives a **broader explanation**, but which is mostly only **related to the stipulations of the OH standard**, but not also to the additional questions in the 2009 self-assessment questionnaire and 2010 audit questionnaire.

c = TSO gives a broader explanation which is enlarged to **some explicit details asked in the additional questions.**

b = TSO gives a broader explanation which is **enlarged to the most of the explicit details asked in the additional questions.**

a = TSO gives a broader explanation which is **enlarged to all explicit details asked in the additional questions.**

Quality of list of references (it is always applied to the entirety of stipulations of an OH standard and to additional questions formulated by the SG CME):

Missing = TSO **doesn't give any list of references or gives an elusive answer.**

e = TSO lists documents which are **only indirectly** related to the question.

d = TSO lists some documents for which **one can reasonably assume** that they are related to the question, **but an explanation is needed.**

c = TSO lists some documents which are **obviously** related to the question, **but the exact document titles are missing.**

b = TSO lists some documents which are **obviously** related to the question and **the document titles seem to be complete.**

a = TSO lists some documents which are **obviously** related to the question, **the document titles seem to be complete and an additional explanation is given.**

Compliance level, mitigation/improvement plan - the compliance level the TSO declared and the quality of corresponding mitigation plan or improvement plan to remove non-compliance or sufficient compliance, respectively, are also considered within the scope of the Compliance Audit:

Compliance level the audited TSO declared:

FC = fully compliant (this implies that neither a mitigation nor an improvement plan is needed)

SC = sufficiently compliant (this implies an improvement to reach full compliance plan is obligatory)

NC = non-compliant (a mitigation plan to remove non-compliance and reach full compliance is obligatory)

N/A = not applicable

Quality of mitigation/improvement plan:

Missing = TSO **doesn't specify a mitigation/improvement plan.**

b = TSO specifies a **mitigation/improvement plan.**

a = TSO specifies a **in depth mitigation/improvement plan.**

Deadline missing (additionally to marks "a" and "b", if applicable) = TSO specifies an **(in depth) mitigation/improvement plan, but without a deadline.**

3.5 CONFIDENTIALITY

By signing this report the Audit Team members assure that they will maintain the confidentiality of information obtained during the Compliance Audit and drafting of the Audit Report. Moreover, they express their readiness to sign a confidentiality agreement in the future should Amprion assert such a claim.

4 AUDIT RESULTS

4.1 P8-A-R1: TRAINING PROGRAM

PREPARATORY PHASE

OH standard	Training program. Each TSO provides its dispatchers with a structured training program that is designed to develop and improve their skills. This program includes initial and continuous parts. The training has to be permanently adapted to the operational evolutions. All the issues of the training have to be regularly checked and updated.	
N°1: P8-A-R1	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation / improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°1: P8-A-R1	<p>Compliance Level: FC</p> <p>Explanation of the declared compliance level: The Dispatcher Training Program consists of two parts, beginning with an initial program that is followed by a continuous coaching program. Main focus is on training-on-the-job and continuously working as shift engineer, also in projects related to operational tasks (outage planning). The manager of the department continuously improves the training program i.e. due to new regulatory or market rules.</p> <p>Additional Questions Do you have a training program including both initial and continuous part? yes Do you adapt permanently the training program? yes Do you have criteria to check whether the training program is in accordance with the current operational challenges? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°1: P8-A-R1	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: <div style="background-color: #cccccc; height: 20px; width: 100%;"></div> <hr style="border-top: 1px dashed black;"/></p>

	<p>1.1 Do YOU HAVE A TRAINING PROGRAM INCLUDING BOTH INITIAL AND CONTINUOUS PART?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The dispatcher training program consists of two parts, beginning with an initial training program that is followed by a continuous training program.</p> <p>The contents of the training programs are documented/described in Amprion's Ausbildungsprogramm Ingenieur "Netzführung" und Ingenieur "Systemeinsatz" in der Hauptschaltleitung Brauweiler.</p> <p>1.2 HOW OFTEN DO YOU CARRY OUT THE CONTINUOUS TRAINING PROGRAM?</p> <p>Instances per year: permanent conducted to the normal work</p> <p>List of Evidences. Comments:</p> <p>The normal work of the dispatchers will be permanently supported/conducted by the continuous training program (i.e. participation in projects related to the tasks and responsibilities of grid and system engineer , participation in meetings with the project planning or operational staff, participation in special technical seminars/courses, visits of substations and power plants, outage planning, ex-ante and ex-post analyses, cross-visits, workshops, simulator trainings).</p> <p>1.3 Do YOU ADAPT THE TRAINING PROGRAM ON A REGULAR BASIS AND IF YES HOW OFTEN?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The training program is improved continuously and revised or adapted as and when necessary (i.e. in case of implementation of new processes or changes of processes, in cases of launching new regulatory, market or other rules or acts).</p> <p>1.4 Do YOU HAVE CRITERIA TO CHECK WHETHER THE TRAINING PROGRAM IS IN ACCORDANCE WITH THE CURRENT OPERATIONAL CHALLENGES?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The Training Management Committee checks continuously the content and the validity of all training programs. In cases of necessity the programs are revised and adapted immediately to fulfil current and future tasks.</p> <p>1.5 Do YOU DIVERSIFY THE TRAINING CONTENTS ON THE BASE OF THE DISPATCHER ASSIGNMENT (OFF-DEMAND BALANCE, NETWORK SECURITY, ETC.)?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>In Amprion's Main Control Centre there are two workplaces with different tasks and responsibilities:</p> <p>Responsibility for the Grid- and the System Security (Overall responsibility):</p> <p>Dispatcher "Netzführung"</p> <p>Responsibility for System Security and Ancillary Services:</p> <p>Dispatcher "Systemeinsatz"</p> <p>Therefore the contents of the initial training program and the continuous training program are specialized for the Dispatcher "Netzführung" and the Dispatcher "Systemeinsatz".</p>
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Question	Response
<p>1. P8-A-R1: Training program</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented their training program for dispatchers “Amprion’s Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler”. The audit team was also provided a translation of the document “Training Program Dispatcher Netzführung (Grid Engineer) and Systemeinsatz (System Engineer) in the Main Control Centre in Brauweiler”. The document contains descriptions initial and continuous programs. It was signed by Mr. Michael Rogge (Manager System Operation), Mr. Heinz-Dieter Ziesemann (Manager Main Control Centre) and Mr. Martin Umbach (Training Coordination Manager) on 1st of September in 2009. Three previously mentioned people also form Training Coordination Committee.</p> <p>Amprion also showed “Attachment to the Training program, Dispatcher Netzführung and Dispatcher Systemeinsatz in the Main Control Centre Brauweiler” document which is updated on each new training cycle. The attachment describes detailed separate initial and continuous training programs for both dispatchers: “Netzführung” (last version is from 1st of November in 2009) and “Systemeinsatz” (last version is from 1st of September in 2010).</p> <p>All previously mentioned documents are also updated every time when need arises.</p> <p>Continuous training in practice is part of normal work routines. All dispatchers have also tasks outside the control room, e.g. projects, grid planning and workshops.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark: Audit team proposes to attach table of revisions to the above mentioned documents: author, date, short description.</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.2 P8-A-R2: INITIAL PROGRAM

PREPARATORY PHASE

OH standard	Initial program. The initial program consists of a theoretical part and on-the-job part complemented by simulator sessions.	
N°2: P8-A-R2	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°2: P8-A-R2	<p>Compliance Level: FC Explanation of the declared compliance level: The Initial Dispatcher Training Program is divided into two parts. First a new employee will be trained in all items related to system operation. This program normally takes 9-12 months. Afterwards the engineer will work in shift as system engineer with the tasks of system balancing (load-frequency), schedule management, wind energy responsible party and other tasks. If a new grid engineer is needed, the most experienced system engineer will start his second education for grid operation. This education will take 12-15 months. The initial program consists of a theoretical part and an on-the-job training complemented by simulator sessions.</p> <p>Additional Questions Does your initial program consist of both theoretical and on-the-job part? yes Does your initial program include simulator sessions as well? yes How long does the initial program on-the-job part (education) last before the new candidate is certified to take the respective dispatcher position? (How many months) (3 / 6 months - as defined in A-G1) months: 12</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°2: P8-A-R2	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: _____</p> <hr/> <p>2.1 DOES YOUR INITIAL PROGRAM CONSIST OF BOTH THEORETICAL AND ON-THE-JOB PART? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: The initial training programs consist of a theoretical part and a continuous on-the-job training, complimented by simulator sessions. The contents of the initial training programs are documented/described in Amprion's Ausbildungsprogramm Ingenieur "Netzführung" und Ingenieur "Systemeinsatz" in der Hauptschaltleitung Brauweiler.</p>

	<p>2.2 DOES YOUR INITIAL PROGRAM INCLUDE SIMULATOR SESSIONS?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The initial training program includes also a simulator session. The simulator sessions take place externally at the Independent Training & Service Centre for Power System Control of the DUtrain GmbH in Duisburg, Germany.</p> <p>2.3 HOW LONG DOES THE INITIAL PROGRAM ON-THE-JOB PART (EDUCATION) LAST BEFORE THE NEW CANDIDATE IS CERTIFIED TO TAKE THE RESPECTIVE DISPATCHER POSITION? (HOW MANY MONTHS?) (3 / 6 MONTHS - AS DEFINED IN A-G1)</p> <p>Time: Dispatcher "Netzführung" generally 12 – 15 month Dispatcher "Systemeinsatz" generally 9 – 12 month</p> <p>List of Evidences. Comments:</p> <p>As a general rule the initial training program lasts app. 12 months. Due to specific previous knowledge and experiences of a new dispatcher (i.e. a few years of experiences in another technical department of Amprion) the training program can be finished earlier (i.e. when a dispatcher transfers from a Regional Control Centre Operator or from the Process IT). The Training Management Committee decides on an individual basis when the member of staff is ready for his examination.</p>
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AUDIT PHASE

Question	Response
<p>2. P8-A-R2: Initial program</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented their training program for dispatchers "Amprion's Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler". The audit team was also provided a translation of the document "Training Program Dispatcher Netzführung (Grid Engineer) and Systemeinsatz (System Engineer) in the Main Control Centre in Brauweiler". The document contains description of the initial program.</p> <p>Amprion also showed "Attachment to the Training program, Dispatcher Netzführung and Dispatcher Systemeinsatz in the Main Control Centre Brauweiler" document which is updated on each new training cycle. The attachment describes detailed initial training programs for both dispatchers: "Netzführung" (last version is from 1st of November in 2009) and "Systemeinsatz" (last version is from 1st of September in 2010).</p> <p>Above mentioned combined documents contain descriptions of theoretical, practical and simulator training for a dispatcher candidate. The initial training lasts 9-12 months for the system engineer and extra 12-15 months for the grid engineer. All initial training plans are tailored for each dispatcher candidate to suit the candidate's abilities.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

Question	Response
Compliance level: FC Remark: Improvement/mitigation plan with deadline (if needed):	

4.3 P8-A-R3: CONTINUOUS PROGRAM

PREPARATORY PHASE

OH standard	<p>Continuous program. The continuous program is applied to all dispatchers as soon as they are certified and nominated to a dispatcher position. The main aim of the continuous program is to keep and extend the dispatchers' knowledge and competences. The continuous program is established to complement the initial program with:</p> <ul style="list-style-type: none"> - advanced theoretical parts; - learning of new rules and procedures; - additional simulator sessions. 	
N°3: P8-A-R3	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°3: P8-A-R3	<p>Compliance Level: FC Explanation of the declared compliance level: Already qualified system and grid engineers take part in the normal continuous education process. Therefore they participate in simulator sessions, internal workshops for new rules and processes, external workshops, inter-TSO workshops, etc. . The training manager and the manager of the department are responsible that all dispatchers participate in workshops regularly. Each 6-8 weeks internal shift meetings take place to exchange experiences. These meetings are used to present some major issues of grid components, stability analyses by internal experts. External simulator sessions are offered at least once per 2 year.</p> <p>Additional Questions Do you provide advanced theoretical parts? yes Do you provide teaching of new rules and procedures? yes How often do you provide simulator sessions? months: 1 Do you train dispatchers to work under new conditions affecting network operations (new network elements or power units)? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°3: P8-A-R3	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: <div style="background-color: #cccccc; height: 20px; width: 100%;"></div> <hr style="border-top: 1px dashed black;"/></p> <p>3.1 DO YOU PROVIDE ADVANCED THEORETICAL PARTS? IN CASE YOU DO, PLEASE DESCRIBE SHORTLY ITS CONTENT. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: <div style="background-color: #cccccc; padding: 5px;"> The dispatchers participate in - project groups related to issues specific to their job (i.e. grid analyses, capacity allocation, intraday schedule management, day-ahead congestion forecast, intraday congestion forecast, reserve power, </div> </p>

- system stability, grid restoration, balancing of renewal energy, information exchange)
- in the yearly, monthly and weekly outage planning
- in meetings with project planning or operational staff
- in internal shift meetings (normally 1/month) and jour fixes (i.e. reserve power, renewals, security calculation, data base)
- in special technical seminars/courses (i.e. protection technology)
- visits of substations and power plants know-how exchange,
- cross-visits and workshops with other TSOs, DSOs, power plants and international units
- simulator sessions

3.2 DO YOU PROVIDE TEACHING OF NEW RULES AND PROCEDURES?

Yes No

List of Evidences. Comments:

Before implementation of any new or modified processes or procedures there is a compulsory workshop or an introduction meeting. Depending on the issue normally one of the dispatchers who is member of the process team or an expert of another department, the manager of the main control centre or the manager of system operation will facilitate the workshop and provide evidence of training.

3.3 HOW OFTEN DO YOU PROVIDE SIMULATOR SESSIONS?

Annually to each dispatcher: Normally each dispatcher every two years

List of Evidences. Comments:

- in average 3 internal simulator trainings per year, each time different members of the Control Centres, with Amprion's Regional Control Centres (GSL North and GSL South), different Distribution System Operators and Power Plants
- in average 2 simulator trainings per year with the other German TSOs in the German Control Block ("Systemführerkolloquium")
- in preparation 1 common simulator training per year for the CWE-Region with TenneT, ELIA, TPS and Amprion (common workshops are already established and running)
- in preparation 1 common simulator training per year for the FR-DE-Region with RTE, EnBW TNG and Amprion (common workshops are already established and running)
- in preparation 1 common simulator training per year for the DACH-Region with swissgrid, APG, TIWAG Netz, VKW-Netz, TPS, EnBW TNG and Amprion (common workshops are already established and running)

3.4 DO YOU TRAIN THE RESTORATION AFTER A BLACKOUT?

Yes No

List of Evidences. Comments:

The training of grid restoration after blackout is an important and integral part of our simulator training. We differentiate between two different main scenarios:

- Restoration with the help of a ENTSO-E RG CE partner (Voltage demand from an adjacent grid)
- Restoration with black-start-capable units

3.5 DO YOU CARRY OUT EXCEPTIONAL TRAINING SESSIONS WITHIN THE SCOPE OF THE CONTINUOUS TRAINING IN CASE OF NEW/CHANGED PROCEDURES?

Yes No

	<p>List of Evidences. Comments:</p> <p>Before implementation of any new or changed processes or procedures there is a workshop or an introduction meeting. Depending to the issue normally one of the dispatchers who is member of the process team, an expert of another department, the manager of the main control centre or the manager of system operation will facilitate/lead the workshop or the meeting. In cases that these workshops or introduction meetings are not sufficient an additional specific education or training will organised (i.e. education for traders).</p> <p>3.6 DO YOU TRAIN YOUR DISPATCHERS ONE BY ONE OR AS A COMPLETE SHIFTING TEAM?</p> <p>Single training <input checked="" type="checkbox"/> Shifting team training <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>Normally the dispatchers will be trained one on one. I.e. only the visits of substations, power plants, cross-visits and workshops are organized for groups of dispatchers at the same time.</p> <p>After the successful education of a dispatcher he will form/constitute a shift team with a fixed partner. However due to routine changes of the shift schedule the partner may change several times.</p> <p>3.7 DO YOU TRAIN DISPATCHERS TO WORK UNDER NEW CONDITIONS AFFECTING NETWORK OPERATIONS (NEW NETWORK ELEMENTS OR POWER UNITS)?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The dispatchers are involved in the grid development and grid planning (normally one meeting per month with the planning department). In this phase the dispatchers are also involved in grid analyses with the planning department. The operational experiences of the dispatchers will be taken into account by the analyses of different scenarios. They are also involved in substation and tie line projects, due to outage planning and in the commissioning of new grid elements and power plants.</p>
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AUDIT PHASE

Question	Response
<p>3. P8-A-R3: Continuous program</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented their training program for dispatchers “Amprion’s Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler”. The audit team was also provided a translation of the document “Training Program Dispatcher Netzführung (Grid Engineer) and Systemeinsatz (System Engineer) in the Main Control Centre in Brauweiler”. The document contains description of the continuous program.</p> <p>Amprion also showed “Attachment to the Training program, Dispatcher Netzführung and Dispatcher Systemeinsatz in the Main Control Centre Brauweiler” document which is updated on each new training cycle. The attachment describes detailed continuous training programs for both dispatchers: “Netzführung” (last version is from 1st of November in 2009) and “Systemeinsatz” (last version is from 1st of September in 2010).</p> <p>Above mentioned combined documents contain descriptions and procedures for all required parts of the continuous program. All continuous training plans are tailored for each dispatcher to suit candidate’s abilities.</p> <p>Continuous training in practice is part of normal work routines. All</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

Question	Response
<p>dispatchers have also tasks outside the control room during their office days, e.g. projects, grid planning and workshops. Amprion also showed lists of participants on various training events.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	

4.4 P8-A-R4: ENGLISH TRAINING

PREPARATORY PHASE

OH standard	English training. Dispatchers in contact with neighbouring control areas shall have sufficient knowledge of English and operational terms to carry out their tasks, ensuring the safe and smooth flow of information in an international environment using clear expressions in order to ease an immediate understanding.	
N°4: P8-A-R4	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°4: P8-A-R4	<p>Compliance Level: FC Explanation of the declared compliance level: For each system and grid engineer a continuous English training is obligatory. The lessons are held by a native speaker and reflect the realities of every day procedures. The English lessons take place every 6-8 weeks with not more than 10 participants in each course. The participants of a course are chosen regarding their individual level of English skills.</p> <p>Additional Questions Do you verify English speaking skills of your dispatchers? yes Does the learning of English technical terms relevant to system operation make a part of the dispatcher training? yes Does each shift team have at least one dispatcher who speaks English? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°4: P8-A-R4	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: _____</p> <p>4.1 DO YOU VERIFY ENGLISH SPEAKING SKILLS OF YOUR DISPATCHERS? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: English language is a prerequisite for employment as a dispatcher. Furthermore for all dispatchers a continuous English training to improve and maintain an active level is obligatory. The day seminars are held by an external trainer (native speaker) and reflect the realities of every day procedures found in the Main Control Centre. The English lessons take place every 4 weeks with not more than 8 participants in each course.</p> <p>4.2 DOES THE LEARNING OF ENGLISH TECHNICAL TERMS RELEVANT TO SYSTEM OPERATION MAKE A PART OF THE</p>

	<p>DISPATCHER TRAINING?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>English technical terms relevant to grid and system operation, market rules, scheduling and accounting and other specific technical vocabularies are part of the English training sessions, at Amprion English training is tailor made for this purpose.</p> <p>4.3 DO YOU ALSO TRAIN DISPATCHERS TO ON PHONE CONVERSATION IN ENGLISH?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>Contents of the English lessons are:</p> <ul style="list-style-type: none"> - Issues related to the tasks and responsibilities of grid and system engineers - Communication training for meetings and negotiations - Technical reading and discussion (among other things documents of ENTSO-E, ERGEC and CIGRE) - Vocabulary technical terms - Phone calls - Conversation - Relevant Expressions <p>4.4 DOES EACH SHIFT TEAM HAVE AT LEAST ONE DISPATCHER WHO SPEAKS ENGLISH?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>Every dispatcher has good and usable knowledge of the English language.</p> <p>4.5 DO YOU MAINTAIN THE EXISTING SKILLS OF DISPATCHERS TO SPEAK LANGUAGES OF NEIGHBOURING COUNTRIES IN ADDITION TO ENGLISH? IN CASE YOU DO WHICH LANGUAGES ARE CONCERNED?</p> <p>Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>There are no additional special language training programs. But some of our dispatchers have a practical knowledge of French, Dutch, Spanish and Italian languages.</p>
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AUDIT PHASE

Question	Response
<p>4. P8-A-R4: English training</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented “Attachment to the Training program, Dispatcher Netzführung and Dispatcher Systemeinsatz in the Main Control Centre Brauweiler” document which describes general English training program for dispatchers in detail. Amprion has a dedicated native English teacher for their company. All dispatchers can influence on their training agenda according their personal needs. Amprion also presented participation lists on English lessons. All dispatcher attend monthly on English training and they also have possibility to acquire</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

Question	Response
<p>English language certification.</p> <p>All current and future job descriptions have a requirement for good knowledge of English language.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	

4.5 P8-A-S1: TRAINING PROGRAMS

PREPARATORY PHASE

OH standard	<p>S1: Training programs. The initial and continuous program has to consider the relevant parts of the UCTE Operation Handbook and mutual agreements between TSOs. Each TSO defines its specific requirements for the initial program and the continuous program and their duration.</p> <p>S1.1: Initial program: The initial program has to include at least the knowledge of components of the power system, the operation of the power system, the tools for operation and respective on-the-job-practice.</p> <p>S1.2: Continuous program. The continuous program has to focus on theoretical and practical aspects of operation as well as on respective boundary conditions. The inter-TSO training as defined in chapter B is part of the continuous training.</p>	
N°5: P8-A-S1	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°5: P8-A-S1	<p>Compliance Level: FC</p> <p>Explanation of the declared compliance level: The Initial Dispatchers Training Program as well as the Continuous Dispatchers Training Program take care about the requirements of the rules of the operation handbook and the content of bilateral agreements with adjacent TSOs. Inter-TSO training with every adjacent TSO is part of our continuous training program.</p> <p>Additional Questions Is the inter-TSO training part of your continuous training program? yes Does your training program cover agreements between TSOs? yes Does your training program consider the relevant parts of the UCTEOH? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°5: P8-A-S1	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes:</p> <p style="text-align: center;">List of Evidences of Mitigation Plan. Comments:</p> <div style="background-color: #cccccc; height: 20px; width: 100%;"></div> <p>-----</p> <p>5.1 DOES YOUR TRAINING PROGRAM CONSIDER THE RELEVANT PARTS OF THE RG CE OH?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <div style="background-color: #cccccc; padding: 5px;"> The Initial Dispatchers Training Program as well as the Continuous Dispatchers Training Program takes into consideration the requirements of the ENTSO-E RG CE OH, in general but also especially Policy 1, Policy 2, Policy 3, Policy 4, Policy 5 and Policy 8. </div>

5.2 Do YOUR DISPATCHERS HAVE TO ACCESS TO RG CE OH?
 Yes No
List of Evidences. Comments:
 The ENTSO-E RG CE OH is available for all dispatchers in the control room.

5.3 Is THE INTER-TSO TRAINING PART OF YOUR CONTINUOUS TRAINING PROGRAM?
 Yes No
List of Evidences. Comments:
 Inter-TSO training with every adjacent TSO is part of our continuous training program.
 Periodical Inter-TSO-workshops with
 - TenneT, ELIA, TPS and Amprion (CWE-Region)
 - EnBW TNG, RTE and Amprion (FR-DE-Region)
 - APG, TIWAG Netz, VKW-Netz, swissgrid, EnBW TNG, TPS and Amprion (DACH-Region)
 are established and running.

5.4 DOES YOUR TRAINING PROGRAM COVER AGREEMENTS BETWEEN TSOS?
 Yes No
List of Evidences. Comments:
 The Initial Dispatchers Training Program as well as the Continuous Dispatchers Training Program takes into consideration the requirements of bilateral agreements with adjacent TSOs (Agreement on Grid and System Operation Management). Furthermore the dispatchers are involved in the preparation and the data administration of the annexes of these agreements.

AUDIT PHASE

Question	Response
<p>5. P8-A-S1: Training programs</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented their training program for dispatchers “Amprion’s Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler”. The audit team was also provided a translation of the document “Training Program Dispatcher Netzführung (Grid Engineer) and Systemeinsatz (System Engineer) in the Main Control Centre in Brauweiler”. The document contains description of the initial program.</p> <p>Amprion also showed “Attachment to the Training program, Dispatcher Netzführung and Dispatcher Systemeinsatz in the Main Control Centre Brauweiler” document which is updated on each new training cycle. The attachment describes detailed initial training programs for both dispatchers: “Netzführung” (last version is from 1st of November in 2009) and “Systemeinsatz” (last version is from 1st of September in 2010).</p> <p>Above mentioned combined documents contain descriptions of theoretical, practical and simulator training for a dispatcher candidate.</p>	<p><input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Needs Improvement</p>

Question	Response
<p>The initial training lasts 9-12 months for the system engineer and extra 12-15 months for the grid engineer. All initial training plans are tailored for each dispatcher candidate to suit the candidate's abilities.</p> <p>Above mentioned combined documents contain descriptions and procedures for all required parts of initial and continuous programs. They cover RGCE OH Policies on relevant parts. All training plans are tailored for each dispatcher to suit his/her abilities.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	

4.6 P8-A-S2: TSO REFERENCE LIST OF ENGLISH TECHNICAL TERMS

PREPARATORY PHASE

OH standard	TSO reference list of English technical terms. Each TSO makes available a reference list of technical terms in English with translation to the mother language of dispatchers for operation and for training based on the existing UCTE reference list (see Appendix 8).	
N°6: P8-A-S2	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°6: P8-A-S2	<p>Compliance Level: FC Explanation of the declared compliance level: In addition to the English training sessions a reference list of technical terms, according to the appendix of OH Policy 8, former UCPTTE reference list UCPTTE Terminology for the Operation of the Interconnected Transmission Systems, is provided to all dispatchers. Additional Questions Do you have and make available to dispatchers a list of English technical terms relevant to system operation, with translation into their native language? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°6: P8-A-S2	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: _____</p> <p>6.1 Do you have and make available to dispatchers a list of English technical terms relevant to system operation, with translation into their native language? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: In addition to the English training session's reference lists of technical terms and translations, according to the appendix of ENTSO-E RG CE OH Policy 8, "Terminology for the operation of the interconnected transmission systems", is provided to all dispatchers.</p>

AUDIT PHASE

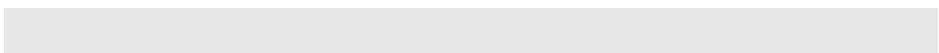
Question	Response
<p>6. P8-A-S2: TSO reference list of English technical terms</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: The list of English technical terms with translation English-German-English is available for dispatchers in a written and electronic format in the control room.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.7 P8-B-R1: EXPERIENCE EXCHANGE

PREPARATORY PHASE

OH standard	Experience exchange. TSOs have to exchange the operational experience with their neighbours in order to cope with normal and abnormal situations in a coordinated way.	
N°7: P8-B-R1	Mismatches with neighbouring TSOs:	None
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°7: P8-B-R1	<p>Compliance Level: FC Explanation of the declared compliance level: With all adjacent TSOs an exchange of operational experience is organized (i.e. weekly conference calls, regional groups and committees, etc.). Moreover RWE TSO has committed itself to implement inter-TSO training sessions in the bilateral agreements with the adjacent TSOs. The dispatcher takes part in the exchange of experiences.</p> <p>Additional Questions Do you organize the exchange of the operational experience with your neighbours? VKW-Netz AG yes VERBUND APG yes TIWAG Netz AG yes swissgrid yes CEGEDEL Net S.A. yes RTE yes TenneT yes EnBW Transportnetze yes E.ON Netz yes Do your dispatchers take part in that exchange? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°7: P8-B-R1	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: </p>

	<p>7.1 DO YOU ORGANIZE THE EXCHANGE OF THE OPERATIONAL EXPERIENCE WITH YOUR NEIGHBOURS? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>With all adjacent TSOs a periodical exchange of operational experience is organized. Dependent to the necessity the exchange of experiences can be arranged as</p> <ul style="list-style-type: none"> - cross-visits between neighbouring TSOs - common training workshops - common simulator training sessions. <p>7.2 DO YOUR DISPATCHERS TAKE PART IN THAT EXCHANGE? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The dispatchers take part in the exchange of experiences.</p> <p>Periodical Inter-TSO-workshops with</p> <ul style="list-style-type: none"> - TenneT, ELIA, TPS and Amprion (CWE-Region) - EnBW TNG, RTE and Amprion (FR-DE-Region) - APG, TIWAG Netz, VKW-Netz, swissgrid, EnBW TNG, TPS and Amprion (DACH-Region) <p>are established and running.</p>
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AUDIT PHASE

Question	Response
<p>7. P8-B-R1: Experience exchange</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented a list "Workshops_Trainings 2010-10-27.xls" of already performed and also planned operational information exchange with all neighbouring TSOs which included cross visits, workshops and common simulator training depending on the TSO. Amprion also provided minutes of the meetings and agendas on various operational information exchange events.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.8 P8-B-S1: COMMON TRAINING

PREPARATORY PHASE

OH standard	<p>Common training. Each TSO implements at least one of the four actions defined in guidelines P8-B-G3 to improve communication and coordinated measures between neighbouring TSO dispatchers. The actions taken have to be chosen depending on the mutual level of risks for secure system operation with the first (or further) neighbouring TSO.</p> <p>G3. Inter-TSO common training.</p> <ul style="list-style-type: none"> - G3.1. Cross visits between neighbouring TSOs dispatchers - G3.2. Common training workshops - G3.3. On-shift cross period - G3.4. Common DTS training sessions 	
N°8: P8-B-S1	Mismatches with neighbouring TSOs:	None
	Quality of explanation:	b
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	SC, We are in a dialogue with APG and VKW Netz to implement actions like cross visits or common workshops (P8-B-G3.1., G3.2.) till middle of 2010.

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°8: P8-B-S1	<p>Compliance Level: SC</p> <p>Actions taken to reach compliance: We are in a dialogue with APG and VKW Netz to implement actions like cross visits or common workshops (P8-B-G3.1., G3.2.) till middle of 2010.</p> <p>Deadline: 7\2010</p> <p>Explanation of the declared compliance level: EnBW TNG, E.ON Netz, VE-T: Cross visits in combination with workshops (G3.1, G3.2) and Common DTS training sessions in combination with workshops (G3.2, G3.4): Common training on emergency procedures and power system restoration at the Independent Training & Service Centre for Power System Control of the DuTrain GmbH in Duisburg, Germany. The theoretical part encompasses current operational issues, approaches on disturbance management, power system restoration and the analysis of significant recent disturbances. The simulator sessions encompass regional disturbance scenarios affecting several TSOs like separation of the interconnected grid into islands or black-outs. EnBW TNG, E.ON Netz, VE-T, CegeDel Net, RTE, swissgrid, TenneT, TIWAG Netz: Cross visits in combination with workshops (G3.1, G3.2): Dispatchers of each TSO meet at a control centre in a rotative way. Thus, have the opportunity to learn more about the individual structures of the organization and to get an impression of the dispatchers facilities of the hosting TSO. Furthermore the dispatchers exchange their experiences and knowledge on dedicated subjects of common interest like coordinated implementation of remedial actions at the borders, operational concepts on thresholds and alarms, individual risk management or concepts for network analysis. EnBW TNG, RWE TSO, Verbund APG, VKW-Netz, TIWAG-Netz, swissgrid: In 2003 a inter-TSO workshop took place. TSOs from D, AT and CH presented their individual concepts for power system restoration. The coordinated power system restoration</p>

after a major blackout was trained by map exercise. Currently EnBW TNG is organizing a similar follow-up. All dispatchers have taken part in the exchange of experience or Inter TSO training.

Additional Questions
Which actions defined in guidelines P8-B-G3 do you implement? (To answer this question border by border).

VKW-Netz AG
P8-B-G3.2

VERBUND APG
P8-B-G3.2

TIWAG Netz AG
P8-B-G3.1

swissgrid
P8-B-G3.1

CEGEDEL Net S.A.
P8-B-G3.1

RTE
P8-B-G3.2

TenneT
P8-B-G3.2

EnBW Transportnetze
P8-B-G3.4

E.ON Netz
P8-B-G3.4

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE																																																	
<p>N°8: P8-B-S1</p>	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes:</p> <p style="text-align: center;">List of Evidences of Mitigation Plan. Comments:</p> <div style="background-color: #cccccc; height: 20px; width: 400px; margin: 0 auto;"></div> <p>-----</p>																																																	
	<p>8.1 WHICH ACTIONS DEFINED IN GUIDELINES P8-B-G3 DO YOU IMPLEMENT? (PLEASE ANSWER THIS QUESTION BORDER BY BORDER)</p> <table border="1" data-bbox="384 1310 1273 1691"> <thead> <tr> <th>Neighbour</th> <th>P8-B-G3.1.</th> <th>P8-B-G3.2.</th> <th>P8-B-G3.3.</th> <th>P8-B-G3.4.</th> </tr> </thead> <tbody> <tr> <td>TIWAG Netz</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>VERBUND APG</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>VKW-Netz</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>swissgrid</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>EnBW TNG</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>TPS</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>RTE</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>CREOS</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> <tr> <td>TenneT</td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> <td>Yes <input type="checkbox"/> No <input type="checkbox"/></td> </tr> </tbody> </table> <p>List of Evidences. Comments:</p> <div style="background-color: #cccccc; padding: 5px;"> <p>- EnBW TNG, TPS, 50HzT: Cross visits in combination with workshops and Common DTS training sessions in combination with workshops</p> <p>- EnBW TNG, TPS, 50HzT, CREOS, RTE, swissgrid, TenneT, TIWAG Netz, VKW-Netz: Cross visits in combination with workshops</p> <p>Dispatchers of each TSO meet at a host control centre in rotation. Thus they have the opportunity to learn more about the individual structures of the organizations and to get an impression of the dispatcher's facilities of the hosting TSO. Furthermore the dispatchers exchange their experiences and</p> </div>	Neighbour	P8-B-G3.1.	P8-B-G3.2.	P8-B-G3.3.	P8-B-G3.4.	TIWAG Netz	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	VERBUND APG	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	VKW-Netz	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	swissgrid	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	EnBW TNG	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	TPS	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	RTE	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	CREOS	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>	TenneT	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
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	<p>their knowledge on dedicated subjects of common interests i.e. coordinated implementation of remedial actions at borders, operational concepts on thresholds and alarms, individual risk management or concepts for network analysis.</p> <p>8.2 Do YOU CARRY OUT COMMON TRAINING ONLY SPORADICALLY OR ON A REGULAR BASIS? How OFTEN IF REGULAR?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>Cross visits are carried out more sporadically as and when necessary.</p> <p>Common workshops are carried out on a regular basis (once per year for the CWE-Region, once per year for the FR-DE-Region, once per year for the DACH-Region).</p> <p>Common simulator trainings are carried out in average twice a year (German TSOs in the German Control Block, "Systemführerkolloquium").</p>
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AUDIT PHASE

Question	Response
<p>8. P8-B-S1.: Common training</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented a list "Workshops_Trainings 2010-10-27.xls" of already performed and also future operational information exchange with all neighbouring TSOs which included cross visits, workshops and common simulator training depending on the TSO. Amprion also provided minutes of the meetings and agendas on various operational information exchange events.</p> <p>Amprion has commenced common training with Austrian TSOs by cross-visits and workshops.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.9 P8-C-S1: COORDINATION OF THE TRAINING

PREPARATORY PHASE

OH standard	Coordination of the training. TSO appoints a training coordination manager responsible for training organization: designing, following-up and updating the full training process.	
N°9: P8-C-S1	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°9: P8-C-S1	<p>Compliance Level: FC Explanation of the declared compliance level: At RWE TSO an experienced grid engineer is appointed as a training coordination expert. The whole operational training program is coordinated by the head of the main control centre, assisted by the training manager.</p> <p>Additional Questions Have you appointed a training coordination manager? Yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°9: P8-C-S1	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: _____</p> <p>9.1 HAVE YOU APPOINTED A TRAINING COORDINATION MANAGER? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: The task of the Training Coordination Manager is carried out by an experienced Dispatcher "Netzführung". To guaranty a continuous education or training he is appointed for a longer period of time by the manager of the Main Control Centre and the Manager of System Operation.</p> <p>9.2 DO YOU HAVE A PERMANENT BODY TO FOLLOW-UP THE TRAINING PROCESS? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: Responsible for the organisation and the contents of the trainings of dispatchers is the Training Management Committee. Members of the Training Management Committee are the Training Coordination Manager, the Manager of the Main Control Centre and the Manager of System Operation. The Training Management Committee is also responsible for the following up and updating of the training process.</p>

AUDIT PHASE

Question	Response
<p>9. P8-C-S1: Coordination of the training</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Document “Amprion’s Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler” proves that the Training Coordination Manager is appointed and it describes the responsibilities of the Training Coordination Manager. The document was signed by Mr. Michael Rogge (Manager System Operation), Mr. Heinz-Dieter Ziesemann (Manager Main Control Centre) and Mr. Martin Umbach (Training Coordination Manager) on 1st of September in 2009. Three previously mentioned people also form Training Coordination Committee which continuously follows and checks training procedures.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.10 P8-C-S2: ORGANIZATION

PREPARATORY PHASE

OH standard	Organization. The training coordination manager determines appropriate procedures for the training organization. These procedures shall cover: - a description of the dispatchers required qualifications (knowledge and skills); - a reference list of topics for training programs linked to the dispatchers required qualification; - the processes for the initial and continuous programs including scripts/documents; of the theoretical sessions, time-schedules, supervision, tools, support for trainees, evaluation/validation and continuous improvement of the programs; - the process of dispatchers accreditation; - trainers selection and training of trainers.	
N°10: P8-C-S2	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°10: P8-C-S2	<p>Compliance Level: FC</p> <p>Explanation of the declared compliance level: An official job description with a definition of the required qualification criteria for system and grid engineers at RWE TSO is given. A reference list of topics for the training program is given by user manuals, advices for grid and system operation in a dedicated handbook and other descriptions of important system and grid management processes (i.e. C-Function determination). These documents are also used to educate and train all dispatchers continuously. The internal trainer and the training coordination expert take part in the normal internal and external continuous training program. Special needs for individual training sessions for the trainers are taken into account. Moreover the manager of the department defines other education topics - not directly linked to grid and system operation issues (i.e. regulatory affairs). The whole operational training program is coordinated by the head of the main control centre, assisted by the training manager. The internal trainer (mentor) of new dispatcher is chosen individually by the manager of the department. Accreditation: At the end of the education phase (initial training program), when the new dispatcher can operate all tasks independently, an assessment of the dispatchers capabilities through an interview takes place.</p> <p>Additional Questions Do your procedures for training include a description of the dispatchers required qualifications? yes Do your procedures for training include a reference list of topics for training programs linked to the dispatchers required qualification? yes Do your procedures for training include the processes for the initial and continuous programs including scripts/documents; of the theoretical sessions, time-schedules, supervision, tools, support for trainees, evaluation/validation and continuous improvement of the programs? yes Do your procedures for training include the process of dispatchers accreditation? yes Do your procedures for training include trainers selection and training of trainers? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
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N°10: P8-C-S2	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes:</p> <p style="text-align: center;">List of Evidences of Mitigation Plan. Comments:</p> <div style="background-color: #cccccc; height: 20px; width: 100%;"></div> <hr style="border-top: 1px dashed #000;"/>
	<p>10.1 Do YOUR PROCEDURES FOR TRAINING INCLUDE A DESCRIPTION OF THE DISPATCHERS REQUIRED QUALIFICATIONS?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <div style="background-color: #cccccc; padding: 5px;">The official job description with a definition of the required qualification criteria for Dispatcher "Netzführung" and Dispatcher "Systemeinsatz" at Amprion is given.</div>
	<p>10.2 Do YOUR PROCEDURES FOR TRAINING INCLUDE A REFERENCE LIST OF TOPICS FOR TRAINING PROGRAMS LINKED TO THE DISPATCHERS REQUIRED QUALIFICATION?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <div style="background-color: #cccccc; padding: 5px;">A reference list of topics for the training program is given in user manuals, advices for grid and system operation in a dedicated handbook and other descriptions of important system and grid management processes (i.e. Guideline for grid operation, C-function- determination, Grid restoration concepts). The contents of the training programs are documented/described in Amprion's Ausbildungsprogramm Ingenieur "Netzführung" und Ingenieur "Systemeinsatz" in der Hauptschaltleitung Brauweiler.</div>
	<p>10.3 Do YOUR PROCEDURES FOR TRAINING INCLUDE THE PROCESSES FOR THE INITIAL AND CONTINUOUS PROGRAMS INCLUDING SCRIPTS/DOCUMENTS; OF THE THEORETICAL SESSIONS, TIME-SCHEDULES, SUPERVISION, TOOLS, SUPPORT FOR TRAINEES, EVALUATION/VALIDATION AND CONTINUOUS IMPROVEMENT OF THE PROGRAMS?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <div style="background-color: #cccccc; padding: 5px;">A reference list of all topics for the training program is given in user manuals, advices for grid and system operation in a dedicated handbook and other descriptions of important system and grid management processes (i.e. Guideline for grid operation, C-function- determination, Grid restoration concepts). These documents are also used to educate and train all dispatchers and within the continuous training program. The contents of the training programs are documented/described in Amprion's Ausbildungsprogramm Ingenieur "Netzführung" und Ingenieur "Systemeinsatz" in der Hauptschaltleitung Brauweiler.</div>
	<p>10.4 Do YOUR PROCEDURES FOR TRAINING INCLUDE THE PROCESS OF DISPATCHERS' ACCREDITATION?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <div style="background-color: #cccccc; padding: 5px;">During the training of the dispatcher candidate, his mentor/trainer and the members of the Training Coordination Committee meet each other to inform about the status of the education of the dispatcher candidate. The last meeting will be app. 3-4 weeks before the examination of the dispatcher candidate. In this meeting also the date for the examination will be fixed. After successful examination (4-5 hours) the Manager of System Operation, the Manager Main Control Centre and the mentor/trainer will deliberate and satisfy themselves on the knowledge of the dispatcher candidate. After a positive and unanimous verdict the accredited qualification is awarded to the new dispatcher.</div>

	<p>10.5 DO YOUR PROCEDURES FOR TRAINING INCLUDE TRAINERS' SELECTION AND TRAINING OF TRAINERS?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>For any training the mentor/trainer is selected individually by the Training Management Committee. Only Dispatchers with perennial operation experience are capable of being mentors/trainers. The mentor/trainer must have an accredited qualification as dispatcher and participates in the continuous training program. Furthermore the mentor/trainer should have adequate professional competences and soft skills which are developed in additional seminars, if necessary.</p>
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AUDIT PHASE

Question	Response
<p>10. P8-C-S2: Organization</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Following two documents "Amprion's Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler" and "Attachment to the Training program, Dispatcher Netzführung and Dispatcher Systemeinsatz in the Main Control Centre Brauweiler" cover requirements set by the standard. In addition Amprion presented "Workshops Trainings 2010-10-27.xls" on taken actions and future plans for various training events. Amprion also showed several presentations on initial and continuous training.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.11 P8-C-S3: EVALUATION

PREPARATORY PHASE

OH standard	Evaluation. The initial program has to be completed by an evaluation in which the knowledge and capabilities of a candidate to perform a dispatcher job are tested. This evaluation is performed by the trainers; a relevant document is forwarded to the manager of the candidate.	
N°11: P8-C-S3	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°11: P8-C-S3	<p>Compliance Level: FC</p> <p>Explanation of the declared compliance level: At the end of the education phase (initial training program), when the new dispatcher can operate all tasks independently, an assessment of the dispatchers capabilities through an interview together with the individual mentor, the head of the main control centre and the head of system operation takes place. In case of a successful assessment, a written endorsement in form of a formal internal certification is written and signed by all interview participants.</p> <p>Additional Questions Do you complete the initial program with a test of the knowledge of dispatches candidates? yes Does the trainer issue a document containing the results of the evaluation to the manager of the candidate? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°11: P8-C-S3	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: [Redacted]</p> <hr/> <p>11.1 DO YOU COMPLETE THE INITIAL PROGRAM WITH A TEST OF THE KNOWLEDGE OF DISPATCHER CANDIDATES? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments: The initial program ends with an official examination of the dispatcher candidate. The examination lasts normally 4-5 hours. The basis of the examination is a confidential questionnaire which is regularly improved and updated by the Training Management Committee.</p> <p>11.2 DOES THE TRAINER ISSUE A DOCUMENT CONTAINING THE RESULTS OF THE EVALUATION TO THE MANAGER OF THE CANDIDATE? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

List of Evidences. Comments:

The Manager of the dispatcher candidate is member of the Training Management Committee and participates also in the examination. After successful examination the Manager of System Operation, the Manager Main Control Centre and the mentor/trainer will deliberate and satisfy themselves on the knowledge of the dispatcher candidate. After a positive and unanimous verdict the accredited qualification is awarded to the new dispatcher. Due to the fact that the Manager of the dispatcher candidate participates in all steps of the evaluation a special document of the mentor/trainer containing the results of the evaluation unnecessary.

A written endorsement in form of a formal internal certification is written and signed by the Manager of System Operation, the Manager Main Control Centre and the mentor/trainer. All relevant partners will be informed in written form about the qualification of the new dispatcher.

11.3 DO YOU HAVE OTHER TRAINERS THAN THE TRAINING COORDINATION MANAGER?Yes No **List of Evidences. Comments:**

Normally any dispatcher with perennial operation experience could be selected as mentor/trainer by the Training Management Committee, provided that he has an accredited qualification as dispatcher, participates the continuous training program and furthermore he has adequate professional competences and soft skills.

11.4 IS TRAINING OF THE DISPATCHERS A FULL TIME JOB FOR TRAINER?Yes No **List of Evidences. Comments:**

During the on-the-job part of the training the dispatcher candidate and the mentor/trainer are always paired together in the same shift. The theoretical part of the training will be carried out during the day shift periods. Due to specific topics in the theoretical part of the trainings the mentor/trainer will be supported by experts from other departments, by the Manager of the Main Control Centre and the Manager of System Operation.

11.5 DO THE TRAINER CARRY OUT THE EVALUATION OF THE DISPATCHERS?Yes No **List of Evidences. Comments:**

During the training of the dispatcher candidate, his mentor/trainer and the members of the Training Coordination Committee meet each other to inform about the status of the education of the dispatcher candidate. At the end of the training period there is an examination for the evaluation of the dispatcher candidate's knowledge. After successful examination the mentor/trainer, the Manager Main Control Centre and Manager of System Operation will deliberate and satisfy themselves on the knowledge of the dispatcher candidate.

11.6 IS THERE ANY EXTERNAL BODY THAT DOES THE EVALUATION OF THE DISPATCHERS?Yes No **List of Evidences. Comments:**

The evaluation of the dispatcher candidate's knowledge will be done by the mentor/trainer, the Manager Main Control Centre and Manager of System Operation.

AUDIT PHASE

Question	Response
<p>11. P8-C-S3: Evaluation</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion presented evaluation exam to audit team and the following document “Amprion’s Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler” which describes evaluation process. The dispatcher candidate has many scheduled meetings with his trainer and his managers to verify their progress in the initial training. Amprion presented evaluation exam questionnaire to the audit team: Kolloquium für Ingenieure “Netzführung” in der Hauptschaltleitung Brauweiler zur Erlangung der Schaltanweisungsberechtigung für das Übertragungsnetz der Amprion GmbH” and Kolloquium für Ingenieure “Systemeinsatz” in der Hauptschaltleitung Brauweiler zur Erlangung der Weisungsberechtigung für das Übertragungsnetz der Amprion GmbH..</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.12 P8-C-S4: FIRST ACCREDITATION

PREPARATORY PHASE

OH standard	First accreditation. The TSO has to deliver a first accreditation to the dispatcher candidate that authorizes him to perform his job in the control room. The first accreditation is attributed according to defined criteria for a duration decided by the TSO as in below-mentioned guidelines.	
N°12: P8-C-S4	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°12: P8-C-S4	<p>Compliance Level: FC Explanation of the declared compliance level: In case of a successful assessment, a written endorsement in form of a formal internal certification is written and signed by all interview participants. This certification authorizes the new dispatcher to perform his job (system or grid engineer) in the main control centre. The accreditation information is also sent to all partners like TSOs, DSOs and power plants.</p> <p>Additional Questions Do you deliver a first accreditation to your dispatcher? yes Do you have criteria for accreditation of dispatcher candidate? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°12: P8-C-S4	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: [Redacted]</p> <hr/> <p>1.1 DO YOU DELIVER A FIRST ACCREDITATION TO YOUR DISPATCHER? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> List of Evidences. Comments: After successful examination and a positive and unanimous verdict the accredited qualification is awarded to the new dispatcher.</p> <p>1.2 DO YOU HAVE CRITERIA FOR ACCREDITATION OF DISPATCHER CANDIDATE? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> List of Evidences. Comments: Requisite for the accreditation for the exam is the evidence that the dispatcher candidate is familiar with the operational processes, procedures and rules and furthermore conversant with the handling of</p>

	<p>the control system and relevant tools.</p> <p>Basis for the exam is a confidential questionnaire of all topics related to the dispatcher's tasks and responsibilities. In the exam the dispatcher candidate has to answer the questions and has to give extensive explanations, statements and comments to the questions.</p> <p>Crucial for the accreditation as dispatcher is a positive and unanimous verdict of the Manager of System Operation, the Manager Main Control Centre and the mentor/trainer.</p> <p>1.3 HOW LONG DOES THE ACCREDITATION LAST?</p> <p>Time:</p> <p>List of Evidences. Comments:</p> <p>Due to Amprion's employment contracts and wage agreements normally the accreditation is unlimited. However in case of culpable negligence the company has the possibility to recall the accreditation temporary or permanent. In case of job change or retirement of a dispatcher the accreditation will be invalid automatically.</p> <p>1.4 DO YOU HAVE DIFFERENT LEVELS OF ACCREDITATION?</p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>Due to the fact that in Amprion's Main Control Centre there are two workplaces with different tasks and responsibilities also the accreditations are specific for:</p> <p>Dispatcher "Netzführung" and Dispatcher "Systemeinsatz".</p> <p>Requisite for the accreditation of Dispatcher "Netzführung" among others is the accreditation of Dispatcher "Systemeinsatz".</p>
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AUDIT PHASE

Question	Response
<p>12. P8-C-S4: First accreditation</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Amprion has two levels of accreditation, one for System Engineer and another for Grid Engineer. Dispatcher certificates were given to audit team for a review and Amprion staff also explained the accreditation process which is described in "Amprion's Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler". Amprion also communicates the accreditation information to all relevant internal and external parties.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.13 P8-C-S5: TRAINERS' SELECTION

PREPARATORY PHASE

OH standard	Trainers' selection. TSOs have to determine the profile of trainers with regards to their respective tasks and responsibilities in the training programs. Trainers are selected internally (experienced dispatchers) or from external bodies.	
N°13: P8-C-S5	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°13: P8-C-S5	<p>Compliance Level: FC</p> <p>Explanation of the declared compliance level: The internal trainer (mentor) of new dispatchers is chosen individually by the manager of the department. All internal trainers are experienced system or grid engineers who are still active dispatchers. To guarantee an intensive mentoring of the candidate, the internal trainer (mentor) is responsible for not more than one new operator at any one time. The training coordination expert is responsible for the organization of the cross visits with neighbouring TSOs, common training workshops and the DTS training sessions. This expert is nominated for a longer duration to guarantee a continuous training of the dispatcher. The simulator sessions take place externally at the Independent Training & Service Centre for Power System Control of the DuTrain GmbH in Duisburg, Germany.</p> <p>Additional Questions Do you have determined profile of trainers? yes Do you appoint external bodies for carrying out the training programs? yes</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°13: P8-C-S5	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes:</p> <p>List of Evidences of Mitigation Plan. Comments:</p> <p>-----</p> <p>13.1 HAVE YOU DETERMINED THE PROFILE TRAINERS SHOULD HAVE? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The most capable mentors/trainers are dispatchers with operational experiences. Requisite is the accreditation as dispatcher and the participation in the continuous training. Furthermore the mentor/trainer should have adequate professional competences and soft skills.</p> <p>13.2 DO YOU APPOINT EXTERNAL BODIES FOR CARRYING OUT THE TRAINING PROGRAMS?</p>

	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>List of Evidences. Comments:</p> <p>The dispatcher simulator training and the training of English language are carried out by external bodies.</p> <p>Also the information about the implementation of specific software applications (i.e. trading tools and wind forecast tools) and the instruction and training of the tools can be carried out by external bodies.</p> <p>Furthermore the information and training about specific technical equipments (i.e. secondary technology, circuit breaker, transformer, HVDC cables, tie line monitoring) can be carried out by internal and external experts.</p> <p>13.3 DO YOU SELECT TRAINERS WITH DISPATCHING EXPERIENCE?</p> <p>Time: At least two years with experiences as dispatcher</p> <p>List of Evidences. Comments:</p> <p>Requisite for the selection of a mentor/trainer is the availability of operational experiences, at least two years.</p>
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AUDIT PHASE

Question	Response
<p>13. P8-C-S5: Trainers' selection</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Selection of trainers is described in "Amprion's Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler". Training Coordination Committee selects experienced dispatchers (at least two years of dispatching experience) to act as trainers. External body DuTrain has been selected as simulator trainer of Amprion. Also English training of dispatchers is carried out by an external specialist.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

4.14 P8-C-S6: TRAINING OF TRAINERS

PREPARATORY PHASE

OH standard	Training of trainers. Depending on education and previous experience, an individual training program is defined for each trainer; it can be provided by internal sessions or by outsourced training sessions.	
N°14: P8-C-S6	Mismatches with neighbouring TSOs:	N/A
	Quality of explanation:	a
	Quality of the list of references:	N/A
	Compliance level, mitigation/ improvement plan:	FC

OH standard	EXPLANATION GIVEN IN THE 2009 SELF-ASSESSMENT QUESTIONNAIRE
N°14: P8-C-S6	<p>Compliance Level: FC</p> <p>Explanation of the declared compliance level: The internal trainer and the training coordination expert take part in the normal internal and external continuous training program. Special needs for individual training sessions for the trainers are taken into account. The internal and external continuous training programs are described in a document. The participation is certified by a formal document.</p> <p>Additional Questions Do you have individual training program for trainers? yes Do you have pedagogical program for trainers? no</p>

OH standard	EXPLANATION GIVEN IN THE 2010 AUDIT QUESTIONNAIRE
N°14: P8-C-S6	<p>Do you have an Addendum to the rule: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p> <p>In case of Yes: List of Evidences of Mitigation Plan. Comments: <div style="background-color: #cccccc; height: 20px; width: 100%;"></div> </p> <hr/> <p>1.6 DO YOU HAVE INDIVIDUAL TRAINING PROGRAM FOR TRAINERS? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> List of Evidences. Comments: <div style="background-color: #cccccc; padding: 5px;"> Additionally to the initial and continuous training programs there is the possibility for an individual training of professional competences and soft skills, if necessary. Special needs for individual training sessions for all trainers are taken into account. </div> </p> <p>1.7 DO YOU HAVE PEDAGOGICAL PROGRAM FOR TRAINERS? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> List of Evidences. Comments: <div style="background-color: #cccccc; padding: 5px;"> Only the Training Coordination Manager has graduated in a pedagogical education during his studies in the Technical University. Also the Manager Main Control Centre and the Manager of System Operation as </div> </p>

	executive managers have trainings in soft skills.
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AUDIT PHASE

Question	Response
<p>14. P8-C-S6: Training of trainers</p> <p>Does the TSO have evidences to confirm self-assessment?</p> <p>Finding: Training Coordination Committee decides case by case the need for training of the trainers. Training Coordination Manager has acquired official teacher qualification certificate. Each trainer as all Amprion employees has a target agreement for personal development. Also “Amprion’s Ausbildungsprogramm Ingenieur Netzführung und Ingenieur Systemeinsatz in der Hauptschaltleitung Brauweiler” includes needs and procedures for training of the trainers.</p> <p>New mark for quality of explanation: a</p> <p>New mark for list of references: a</p> <p>Compliance level: FC</p> <p>Remark:</p> <p>Improvement/mitigation plan with deadline (if needed):</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Needs Improvement</p>

5 CONCLUSIONS

The Compliance Audit conducted at Amprion clearly demonstrated that the on-site checking of the TSO's compliance with the OH standards is one of the best methods for receiving clear and precise information of the audited TSO and to revise its list of evidences.

The Audit Team has a much better opportunity to outline its main intentions at asking questions than within the scope of the self-assessment process. If the audited TSO actively participate in the audit (as Amprion did), the Audit Team always receives high quality explanations. This is also true for the list of evidences, because its quality is not measured only by its completeness and the number of details it contains, but also by the readiness of the audited TSO to show the evidence, to discuss its content or to simply admit that there is no evidence.

The self assessment conclusions of Amprion in 2009 were adequate. The only standard P8-B-S1 assessed then as sufficient compliant has been improved in the last year being nowadays fully compliant.

The Audit Team recommends:

- To attach a table of revisions to all training documents containing information on author, revision date and a short description of the revision

Two day audits seem to be acceptable from the practical point of view, but duration of the audit depends mostly on the OH standards which have to be evaluated and discussed. In case of OH Policy 8 an extended on-site stay wouldn't produce better results; all OH standards were checked in depth in very efficient cooperation with staff of audited TSO.

In case of the Amprion Compliance Audit, all preconditions for an excellent and successful audit were fulfilled, and the Audit Team wishes to express its gratitude for that to the Amprion company management.

6 SIGNATURE PAGE

ENTSO-E Audit Team Members:



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Date and Place: 9th of December in Brussels, Belgium