



European Network of  
Transmission System Operators  
for Electricity

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# COMPLIANCE OVERSIGHT REPORT 2010

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MAY 2011

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ENTSO-E REGIONAL GROUP  
CONTINENTAL EUROPE  
COMPLIANCE MONITORING PROGRAM 2010

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## 1 EXECUTIVE SUMMARY

The Compliance Monitoring Process 2010 was approved by the ENTSO-E Regional Group Continental Europe (RGCE) Plenary on January 26, 2010. The process was based on Transmission System Operator (TSO) self-assessment declarations and Compliance Audits by the RGCE subgroup Compliance Monitoring and Enforcement (SG CME).

The Compliance Oversight Report 2010 contains the results of monitoring compliance in 2010 with the RGCE Operation Handbook (OH) Policies 1, 2 and 3. The RGCE Plenary endorsed the SG CME's suggestion to assess all the standards in these OH policies. The self-assessment process was carried out by means of a questionnaire that was issued in spring 2010. It was complemented with additional questions on a selected group of multilateral standards that are deemed critical for system security and reliable cooperation among TSOs.

The report further contains an overview of the six Compliance Audits performed in 2010. The Compliance Audits were, for the first time, part of the mandatory regular Compliance Monitoring Process to verify the TSOs' answers in the previous year's Compliance Monitoring Process. In 2010 CME Audit Teams checked on-site all the standards of the RGCE OH Policy 8. The Compliance Audits were accomplished in good cooperation with the audited TSOs: CGES, ISO BiH, swissgrid, Amprion, JP EMS and HEP-OPS. The complete audit reports are provided as annexes to this report.

The methodology of the self-assessment process and the Compliance Audits applied in 2010 again proved to provide valuable feedback for a further improvement of both:

- the RGCE OH in terms of the development of clear, understandable and measurable standards;
- TSOs' practices in terms of improving their compliance level, thus increasing the reliability of the interconnected system operation.

During 2010, the workload for the SG CME increased strongly in comparison with the previous years. This becomes clear when taking into account:

- the high number (>300) of standards from Policies 1, 2 and 3 that were subject to the self-assessment questionnaire and also needed to be analyzed by the SG CME;
- the large amount of information received as feedback to the additional questions posed to the TSOs;
- the performance of 6 Compliance Audits for which teams from the SG CME travelled to the audited TSOs' control center to conduct on-site monitoring of the compliance levels declared earlier.

The described workload could only be dealt with thanks to the high level of commitment of the SG CME members and the ENTSO-E Secretariat.

## 2 INTRODUCTION

The objective of the Compliance Monitoring Process is to encourage TSOs' compliance with the Operation Handbook standards of the ENTSO-E Regional Group Continental Europe. The aim of these standards is to ensure a high level of security of supply in the RGCE synchronous area. Since the establishment of the SG CME the Compliance Monitoring Process has been a regular annual practice. The Compliance Monitoring Process 2010 was put in place after introducing a few changes to the methodology, which resulted from the Compliance Monitoring Processes of 2006–2009.

In its meeting on January 26, 2010 the RGCE Plenary approved the Compliance Monitoring Program 2010 and decided to launch the fifth Compliance Monitoring Process. It contained two major parts: the self-assessment process and the on-site audit process.

In the self-assessment process TSOs declare their compliance level via a questionnaire prepared by SG CME. In 2010 the questionnaire assessed all the standards included in OH Policies 1, 2 and 3. In a second round additional questions were asked regarding some multilateral standards that are assumed to be critical to the system security and the reliable cooperation among TSOs.

The SG CME conducted six Compliance Audits in 2010 at CGES, ISO BiH, swissgrid, Amprion, JP EMS and HEP-OPS. The audits were performed by six different teams composed of members of the SG CME and the Compliance Monitoring Advisor from the ENTSO-E Secretariat. The goal of the audits was to check on-site the compliance of the previously mentioned TSOs with all the standards and requirements of OH Policy 8, which were part of the self-assessment process in 2009.

The results of the Compliance Monitoring Process 2010 with self-assessment and on-site audit processes are enclosed in the present Compliance Oversight Report 2010. The report contains an analysis of the TSOs' answers in the self-assessment process with a qualitative and statistical approach. Each Compliance Audit is briefly summarized and the complete reports are provided as annexes to the present COR 2010. The COR 2010 conclusions also include recommendations for the Compliance Monitoring Process 2011 and improvement proposals for the RGCE OH.

### 3 SELF-ASSESSMENT PROCESS 2010 IN GENERAL

The self-assessment process of the CMP 2010 was managed via a web-based questionnaire. The TSOs had to declare their compliance levels with all the standards in OH Policies 1, 2 and 3 as well as answering additional questions on a selected group of standards. The Control Area Manager of each TSO had to declare a compliance level with all the monitored standards: fully compliant, sufficiently compliant, non-compliant or not applicable. In the case of a sufficient/non-compliant declaration, the TSO must provide an improvement/mitigation plan with its declaration. A more detailed explanation of compliance declaration levels can be found at the end of this chapter. The process was steered and coordinated by the SG CME and supported by the ENTSO-E Secretariat. The time schedule for the self-assessment can be found in table 1. All the data used for the analysis were printed out from the compliance database as it was on October 18, 2010.

The web questionnaire's compliance declarations produced 411 mismatches between neighboring TSOs on standards involving multilateral borders. The CME group gave the opportunity to all the TSOs to find out the reasons for the incongruence regarding their own companies and the possibility of communicating with their neighboring TSOs to coordinate and review their position in order to harmonize their answers, if needed. For this reason, the web questionnaire was re-opened for modification of the original and additional questions. Due to reliability problems with the database handling the mismatches, they are not presented in the COR 2010. A mismatch does not always indicate a problem between TSOs and some standards are not suitable for harmonization due to different best practices among the TSOs. The SG CME took a close look at every multilateral standard to decide whether harmonization was necessary. The causes might be different, but safe operational practices between TSOs do not endanger the continental synchronous power system.

Selected multilateral standards critical to system security and reliable cooperation among TSOs were complemented with additional questions to give a more detailed view on the compliance declaration of a TSO. The submitted additional questions were closed or open. For a closed question the TSOs only needed to provide a yes/no answer. For an open question the TSOs needed to provide a detailed explanation.

TABLE 1. TIME SCHEDULE FOR THE SELF-ASSESSMENT PROCESS IN 2010

1	Approval of Compliance Monitoring Program 2010	January 26, 2010
2	Publication of the Compliance Monitoring Program 2010 and questionnaire 2010 (via the Extranet) to member TSOs	May 7, 2010
3	Results of the first questionnaire round	June 14, 2010
4	Publication of additional questions to the questionnaire 2010 (via the Extranet) to member TSOs	June 15, 2010
5	Distribution of mismatches concerning multilateral standards included in the questionnaire 2010 to CAMs	June 18, 2010
6	Results of the second questionnaire round	August 2, 2010
7	Checking the mismatches with neighboring TSOs	August 2, 2010
8	Acknowledgement of the Compliance Oversight Report 2010 by the RGCE Plenary	February 8, 2011

### Fully compliant (FC)

This category is applied when the RGCE member TSO fulfils an RGCE Operation Handbook standard in all details.

### Sufficiently compliant (SC)

This category is applied when all the essential parts of an examined RGCE Operation Handbook standard are fulfilled, but the standard is not fulfilled in all details. The sufficiently compliant RGCE member TSO must submit a correct improvement plan. In the case of any disagreement regarding which parts of an Operation Handbook standard are essential, the relevant RGCE subgroups will be consulted. The final decision on the matter will be taken by the RGCE Plenary.

### Non-compliant (NC)

This category is applied when the examined RGCE Operation Handbook standard is not fulfilled at all or in any of its essential parts. The non-compliant RGCE member TSO must submit a non-compliance declaration and a correct mitigation plan.

### Not applicable (N/A)

This category is applied when a given standard is not applicable (e.g. it is directed to a Control Block while a TSO performs only the role of a Control Area).



## 4 SELF-ASSESSMENT COMPLIANCE DECLARATIONS

### 4.1 Delicate standards

All the RGCE TSOs' compliance declarations were collected in one database from which the analysis data were printed. Table 2 below presents the seven standards that are considered the most "difficult" to comply with because they received three or more non-compliance declarations from different TSOs. Below the list the text of the standards concerned is stated.

TABLE 2. RGCE OH STANDARDS WITH AT LEAST THREE NON-COMPLIANCE DECLARATIONS

	AT - Verbund APG	AT - TIWAG Netz AG	AT - VKW-Netz AG	BA - ISO BiH	BE - Elia	BG - ESO EAD	CH - swissgrid	CZ - CEPS	DE - 50Hertz Transmission	DE - Amprion	DE - EnBW Transportnetze	DE - TenneT TSO GmbH	DK_W - Energinet.dk	ES - REE	FR - RTE	GR - HTSO/DESMIE	HR - HEP-OPS	HU - MAVIR Zrt	IT - Terna S.p.A.	ME - CGES	MK - MEPSO	NL - Tennet	PL - PSE Operator S.A.	PT - REN	RO - Transelectrica	RS - JP EMS	SI - ELES	SK - SEPS		
P1-A-S3.1.	N/A	FC	NC	FC	FC	FC	FC	N/A	NC	NC	NC	NC	FC	FC	FC	FC	FC	FC	FC	FC	N/A	FC	FC	FC	FC	FC	FC	FC	FC	FC
P1-B-S4.5.	N/A	FC	NC	N/A	N/A	FC	N/A	N/A	NC	NC	NC	NC	FC	N/A	N/A	N/A	FC	N/A	FC	FC	N/A	FC	FC	N/A	N/A	N/A	N/A	N/A	N/A	FC
P1-C-S3.1.	N/A	FC	NC	FC	FC	FC	FC	N/A	NC	NC	NC	NC	FC	N/A	FC	FC	N/A	FC	FC	FC	N/A	FC	FC	N/A	FC	FC	FC	FC	FC	FC
P3-A1-S2.	N/A	FC	SC	N/A	SC	SC	SC	N/A	NC	NC	NC	NC	SC	FC	SC	SC	FC	FC	FC	FC	N/A	SC	SC	FC	FC	FC	N/A	FC	FC	
P3-A2-S1.	N/A	FC	FC	SC	FC	SC	FC	N/A	FC	NC	FC	NC	SC	FC	FC	FC	FC	FC	FC	FC	N/A	SC	SC	NC	FC	FC	SC	SC	FC	
P3-A2-S2.	N/A	FC	FC	SC	FC	FC	FC	N/A	FC	NC	SC	NC	SC	FC	SC	NC	SC	FC	SC	FC	N/A	NC	FC	NC	FC	FC	NC	SC	FC	
P3-D-S2.	N/A	FC	NC	FC	FC	FC	FC	N/A	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	N/A	SC	NC	FC	FC	FC	FC	SC	FC	

### 4.2 Description of the delicate standards

- P1-A-S3.1: Contribution to PRIMARY CONTROL RESERVE.** The total PRIMARY CONTROL RESERVE (in MW) required for operation of the UCTE SYNCHRONOUS AREA is of the same size as the reference incident. Each CONTROL AREA / BLOCK must contribute to the PRIMARY CONTROL RESERVE proportionally, so that the sum of all shares amounts to the total required PRIMARY CONTROL RESERVE. The respective shares (mandatory PRIMARY CONTROL RESERVES) are defined by multiplying the Overall PRIMARY CONTROL RESERVE for the entire SYNCHRONOUS AREA (see P1-A-D4.7) and the contribution coefficients  $c_i$  of the various CONTROL AREAS / BLOCKS (see P1-A-G3). Any CONTROL AREA can increase its PRIMARY CONTROL RESERVE by 30 % by offering to cover (part of) the obligations of other CONTROL AREAS. However, every CONTROL AREA is allowed to increase its PRIMARY CONTROL RESERVE by 90 MW to cover (part of) the obligations of other CONTROL AREAS (which is approx. 3 % of total UCTE PRIMARY CONTROL RESERVE and corresponds to the limitation for loss of PRIMARY CONTROL RESERVE, see P1-A-S3.3)
- P1-B-S4.5: Border-crossing SECONDARY CONTROL RESERVE.** SECONDARY CONTROL RESERVE can be exchanged border-crossing if the concerned TSOs have confirmed this exchange and provided that 66 % of the SECONDARY CONTROL RESERVE needed are kept geographically within the CONTROL AREA. In addition a fixed share of 50 % of the total needed SECONDARY CONTROL RESERVE plus TERTIARY CONTROL RESERVE must also be kept inside the CONTROL AREA. Sufficient transmission capacity must be allocated between the RESERVE RECEIVING TSO, the RESERVE

TRANSITING TSO and the RESERVE CONNECTING TSO. In case one or more RESERVE TRANSITING TSOs are involved, transmission capacities across the subsequent borders must be available

- **P1-C-S3.1: Fixed Share of Reserves inside the CONTROL AREA.** A fixed share of 50% of the total needed SECONDARY CONTROL RESERVE plus TERTIARY CONTROL RESERVE must be kept inside the CONTROL AREA
- **P3-A1-S2: Coordination for exceptional type of contingency.** It is the responsibility of the operator of the concerned network elements to establish the list of the exceptional type of contingency for security calculation based on the likelihood of occurrence of the event and to communicate this list to the neighbouring TSOs. Each TSO selects these exceptional contingencies based on the respective risk assessment by itself (see P3-A2-S1). Some exceptional events are considered only in case of temporary specific operational conditions, which have to be communicated to neighbours with a view of security calculation. If a TSO A considers a resulting risk for an exceptional type of contingency for elements located in the area of TSO B not considered in the contingency list of TSO B, both TSOs reconsider together their contingency lists.
- **P3-A2-S1: Determination of the external contingency list and observability area.** Each TSO is required to determine the external contingency list and the external observability list related to its responsibility area. External contingency list items must be treated as normal type of contingencies in all N-1 security calculations in all time frames. Additionally exceptional contingencies (double lines, bus bars) as announced by a neighbouring TSO have to be included by the TSO if it considers them very relevant for risks
- **P3-A2-S2: Implementation of observability area.** The external network model corresponding to the observability area must be implemented in the SCADA system and its real-time observability by state estimator must be ensured by a proper amount of exchanged online data
- **P3-D-S2: Transient angle Stability calculation.** Each TSO has at its own disposal relevant dynamic models and dedicated software in order to carry out dynamic simulations ensuring transient angle stability in its responsibility area.

### 4.3 Statistics

From the statistical analysis of the provided answers, conclusions can be reached as follows.

The most critical policies were P1 and P3. In detail:

- Policy 1, dealing with “Load-Frequency Control and Performance,” totaled 31 NC declarations and 34 SC compliance declarations.
- Policy 3, dealing with “Operational Security,” totaled 25 NC declarations and 165 SC compliance declarations.
- The most critical standard was represented by P3-A2-S2, dealing with “Implementation of the Observability Area.” Indeed, 6 TSOs (DE – Amprion, DE

– TenneT TSO GmbH, GR – HTSO/DESMIE, MK – MEPSO, PL – PSE Operator S.A. and RS – JP EMS) declared an NC compliance level while 7 TSOs declared an SC level.

Policy 2, dealing with “Scheduling and Accounting,” issued more consolidated prescriptions and totalized only 12 NC declarations. The most critical standard of this policy was represented by P2-C-S4.3.2, dealing with “Principles of Accounting Data Exchange between TSOs.”

Of the 29 assessed TSOs 11 did not make any NC declarations (AT – TIWAG Netz AG, BE – Elia, BG – ESO EAD, CH – swissgrid, DK – Energinet, HU – MAVIR ZRt, IT – Terna S.p.A., ME – Crnogorski elektroprenosni sistem AD, PT – REN, RO – Transelectrica and SI – ELES). Among them, AT – TIWAG Netz AG, ME – Crnogorski elektroprenosni sistem AD and PT – REN also did not make any SC declarations.

MK – MEPSO provided the highest number of NC declarations (14 standards), followed by DE – Amprion (7 standards), DE – TenneT TSO GmbH (6 standards) and AT – VKW-Netz AG, BA - ISO BiH and CZ – CEPS (5 standards).

Of the 82 standards from Policy 1, 16 received the FC level from all the assessed TSOs. Among them, 3 belonged to part A (dealing with “Primary Control”), 12 to part B (dealing with “Secondary Control”) and 1 to part C (dealing with “Tertiary Control”). No standards from part D (dealing with “Time Control”) received the FC level from all the TSOs.

Of the 155 standards from Policy 2, 10 achieved the FC level from all the assessed TSOs. Among them, 5 belonged to part A (dealing with “Scheduling”) and 5 to part C (dealing with “Accounting and Settlement of Unintentional Deviations”). No standards from part B (dealing with “Online Observation”) achieved the FC level from all the TSOs.

Of the 78 standards from Policy 3, 17 gained the FC level from all the assessed TSOs. Among them, 12 belonged to part A (dealing with “N-1 Security Principle – Operational Planning and Real-Time Operation”), 2 to part B (dealing with “Voltage Control and Reactive Power Management”) and 3 to part C (dealing with “Short Circuit Currents”). No standards from part D (dealing with “Angle Stability”) achieved the FC level from all the TSOs.

Moreover, from a qualitative point of view, conclusions can be reached as follows.

For P1-A-S3.1, P1-B-S4.5 and P1-C-S3.1, the reasons for non-compliance of the German TSOs are due to Germany’s regulatory authority, which addresses a pure merit order for the control reserve in Germany, without any concern for the geographical localization requested by the standard. Discussions between the four involved TSOs and their regulator are foreseen but the deadline for reaching full compliance is not envisaged yet. Another way to deal with this issue is to question the requirement itself with a risk analysis approach, and whether it still has to be written in this way for the future or if it can be modified (within Policy 1 itself or in the future codes at the pan-European level).

For P3-A1-S2 and P3-A2-S1, the reasons for having many TSOs that are “NC” or only “SC” are numerous.

- Concerning the exceptional contingencies, no risk analysis has been conducted yet because it has not been defined in the past. Another case is the existence of such a risk analysis but the work on analyzing the network with this methodology is not finished.
- Moreover, TSOs experienced a lack of formal communication concerning the external contingency list, more generally speaking. Indeed, some bilateral agreements have not been signed yet or need to be updated.
- Last, for the determination of the external contingency list, the threshold that needs to be used by each TSO to identify the outages that lead to consequences has not been clearly defined yet.

For P3-A2-S2, the reasons for non-compliance are mostly due to the fact that after determining the observability area (which is linked to the determination of the external contingency list), the process is still ongoing because to represent all the data in the SCADA takes time (i.e. some data from neighboring TSOs have to be agreed in bilateral agreements). For P3-D-S2, the reasons for non-compliance are mostly due to a lack of tools that include this type of calculation model.

The four matrixes – figure 1-4 – on the following pages contain the compliance declarations by TSO self-assessment for OH Policies 1–3. Colour coding is used to highlight the different compliance categories: green for full compliance, yellow for sufficient compliance, red for non-compliance and grey for not applicable.

Figure 5 shows the distribution of the declared compliance levels in the self-assessment questionnaire per TSO. Figure 6 presents the distribution of the declared compliance levels in the self-assessment questionnaire per OH Policy.











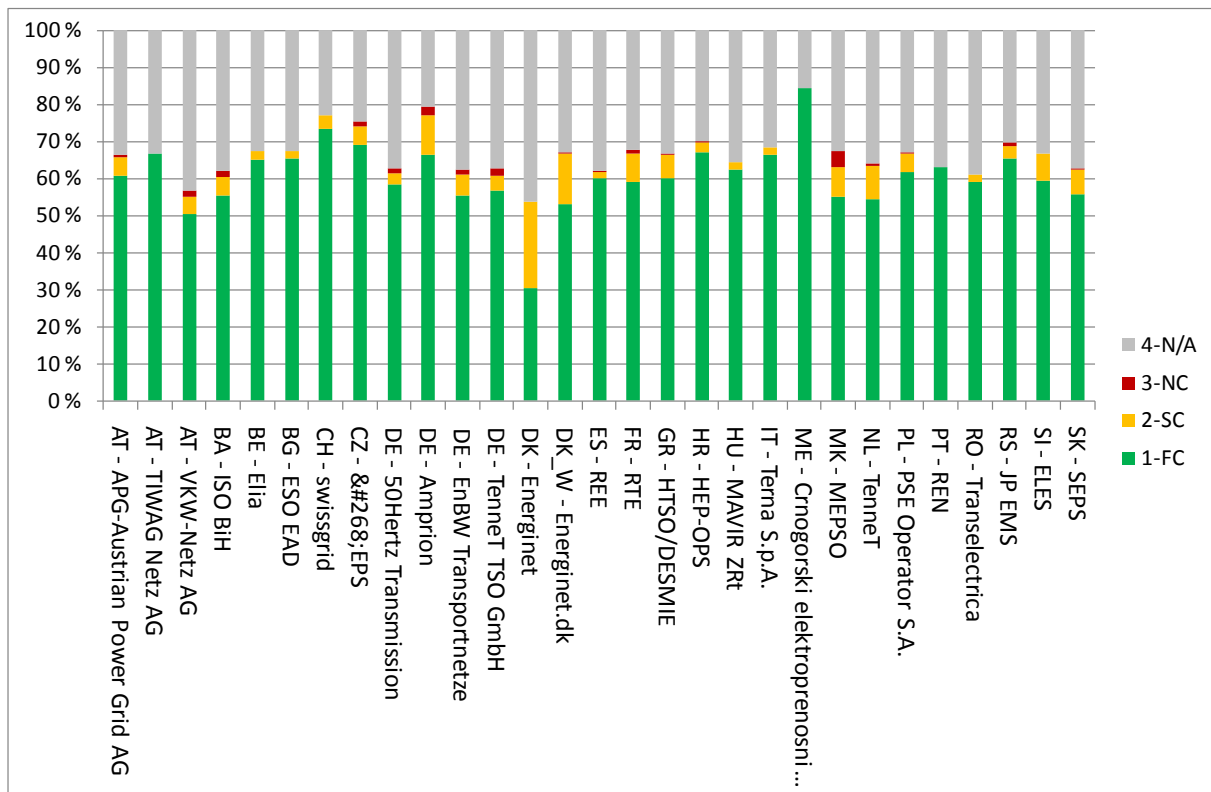


FIGURE 5. COMPLIANCE DECLARATION LEVEL DISTRIBUTION BY TSOs

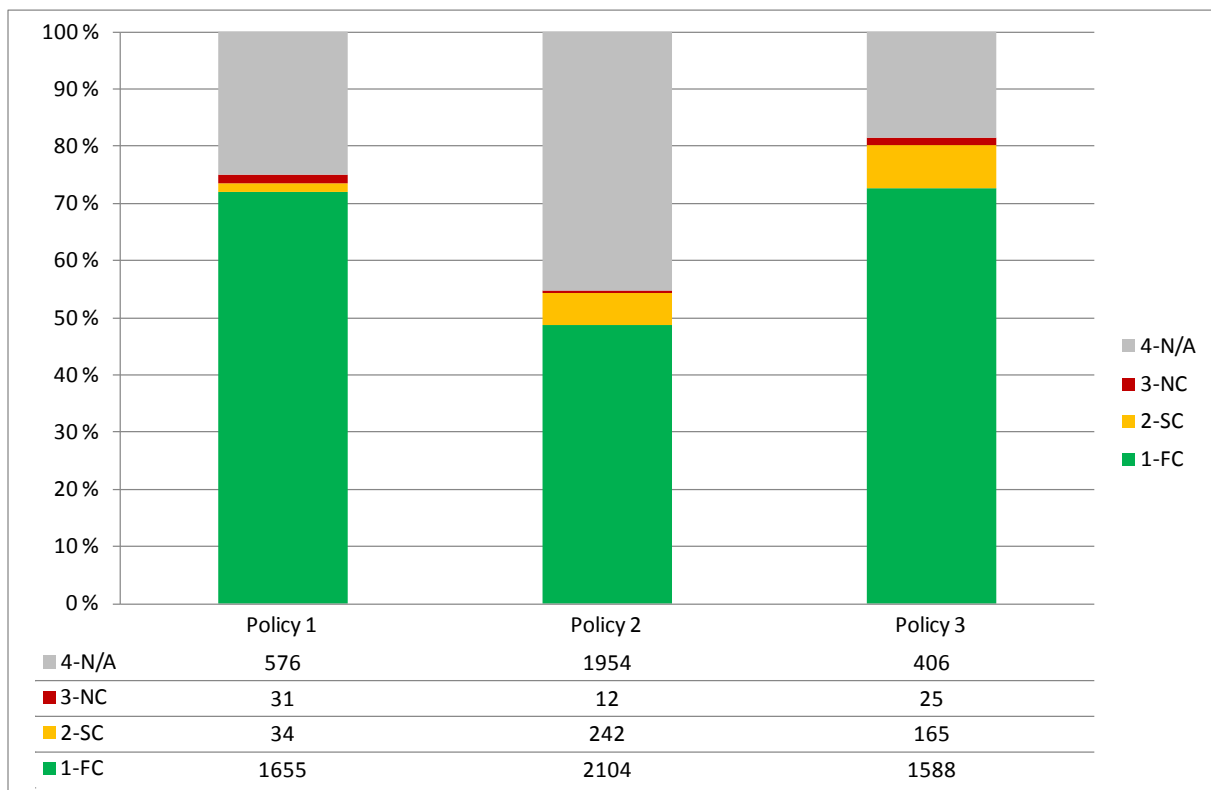


FIGURE 6. COMPLIANCE DECLARATION LEVEL DISTRIBUTION BY POLICIES

## 5 SELF-ASSESSMENT ADDITIONAL QUESTIONS

### 5.1 Understanding the additional questions

Self-assessment was established as the main principle of the Compliance Monitoring Process within the synchronous interconnected TSOs in the Continental Europe synchronous zone (UCTE area at that time) at the very beginning of that process.

Each TSO, having at hand an approved OH Policy, compared it requisite by requisite with the actual performance within the area in which it operated and qualified the compliance level “without any external interference.” The SG CME started collecting these individual self-evaluations and in the previous chapter 4 the final detailed overview of the general and the individual 2010 compliance with standards within Continental Europe were given.

In order to improve the process by harmonizing the different local approaches to the compliance evaluation and the different interpretations of the standard statements among the TSOs, the RGCE Plenary approved the SG CME proposal of going a step further and evaluating the extent to which the particular TSO self-assessment of the compliance level corresponds to the result of an “external and impartial” assessment performed by CME members.

It not being possible to confront all the assessments made by all the TSOs due to the limited resources of the SG CME and the TSOs themselves, only a set of 14 chosen standards from the entire self-assessment process was checked. The checking consisted of the evaluation of the explanations given by the TSO intended to justify its declared compliance level. To harness such an amount of information the TSOs were asked by the CME group to answer an array of closed (yes/no answer) and open so-called additional questions.

A few of these additional questions were slightly beyond the wording of the corresponding OH standard and this was not completely understood and accepted by some TSOs. The reason for asking them was that sometimes OH requisites are quite unrestrictive and thus possible to accomplish by more than one single common mean. Open questions were the only way to investigate them.

### 5.2 Overall results

The detailed output of this survey is available in Annex 1, which shows the SG CME appreciation of the response given by the TSOs standard by standard, TSO by TSO and question by question.

The following table provides a global overview of the explanations given by each TSO for the additional questions.

TABLE 3. OVERVIEW OF THE ADDITIONAL QUESTIONS' ANSWER QUALITY

Company \ Standard	AT - TIWAG Netz AG	AT - APG	AT - VKW-Netz AG	BA - ISO-BiH	BE - Elia	BG - ESO EAD	CH - swissgrid	CZ - CEPS	DE - EnBW TNG	DE - Tennet	DE - Amprion	DE - 50Hertz	DK_W - Energinet.dk	ES - REE	FR - RTE	GR - HTSO/DESMIE	HR - HEP-OPS	HU - MAVIR ZRt.	IT - Terna S.p.A.	LU - CREOS	ME - CGES	MK - MEPSO	NL - TenneT	PL - PSE-Operator SA	PT - REN	RO - Transelectrica	RS - JP EMS	SI - ELES	SK - SEPS	
P1-A-S1.1	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	-	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
P1-B-S4	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
P2-A-S4	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	-	-	FC	FC	FC	FC	FC	FC	FC	FC	FC
P2-A-S5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
P3-A1-S2	FC	SC	SC	N/A	SC	SC	SC	SC	NC	NC	NC	NC	SC	FC	SC	SC	FC	FC	FC	FC	FC	FC	SC	SC	FC	FC	FC	N/A	FC	FC
P3-A2-S5.2	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	SC	FC	FC
P3-A2-S6	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	N/A	N/A	FC	SC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	SC	FC	FC
P3-A3-S2	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
P3-A3-S4.1	FC	FC	SC	FC	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC
P3-A4-S3	FC	SC	FC	FC	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	SC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
P3-A4-S4.1	FC	FC	FC	SC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	NC	FC	SC	FC	FC	FC	FC	FC	SC	FC	FC	SC	N/A	SC	SC
P3-B-S1.2.2	FC	SC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
P3-B-S2.1.2	FC	FC	SC	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	SC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC
P3-D-S2	FC	NC	NC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC

Compliance level:

- FC = fully compliant (this implies that no mitigation plan is needed)
- SC = sufficiently compliant (an improvement plan to reach full compliance is necessary)
- NC = non-compliant (a mitigation plan to remove non-compliance is obligatory)
- N/A = not applicable

Colour coding:

- Green indicates that all answers are good
- Yellow indicates that at least one answer is bad
- Red indicates that at least one answer is missing

## 5.3 The operation within the RGCE synchronous area

These additional questions provided additional feedback of high added value for the understanding of the synchronous zone operation and the OH policy makers as well; the answers given by the TSOs pointed out the actual panorama of the different and the common means used within the control areas for operating the system in accordance with the OH rules.

### 5.3.1 P1-A-S1.1 Primary control organization

In every area of Continental Europe an organizational procedure was available to cover the requirements and obligations for PRIMARY CONTROL actions and reserves performed by third parties. Generally speaking the majority of the TSOs (thirteen of the TSOs) had regulatory support as well as service contracts with providers for primary control supply. Nine of the TSOs did not establish any contracts with providers, having enough regulative support (Grid Code and/or law and/or similar items), while four TSOs did not need specific regulations for primary control supply, using exclusively contracts with providers.

Only one TSO reported that it was currently not monitoring the primary control response and eight reported explicitly that they controlled the provision of primary control in real time while the rest of the TSOs evaluated it ex post. Most of the TSOs surveyed the performance of every single generation unit (probably the significant ones) while seven TSOs controlled the response of the groups only as a whole; the rest controlled the response of the control area both as a whole and as each single generation unit.

### 5.3.2 P1-B-S4 Secondary control reserve

The sum of allocated secondary and tertiary reserves covered normally and within the required time the loss of the largest generation unit connected for all the control areas of Continental Europe.

The availability of a tertiary reserve was monitored by the TSOs, either by using market information (bids, day ahead programs, etc.) or by real-time electrical measurements in a quite equal proportion. In some cases the TSO applied both these methods in order to monitor non-availability of tertiary reserves in case the reserve was not activated on request.

### 5.3.3 P2-A-S4 General agreements between UCTE system operators who are affected by cross-border scheduling

All the TSOs but three had common agreed documents with corresponding ENTSO-E bodies for scheduling of power exchange and also all the TSOs but three did not have an agreement that specified a MTFs (multi time frame system) and a number of digits.

#### 5.3.4 P2-A-S5 General agreements between neighboring control areas

A third of the control areas did not perform automatic matching with their neighbor control areas and nine did not have documented agreements on automatic matching.

Three TSOs declared that they did not have agreements that define the contents and granularity of the exchanged Control Area Schedule (CAS) in order to allow sufficient matching and include timing for processes (e.g. exchange of programs, matching, day-ahead and intraday processes, gate closure, cut-off time).

In seven cases the agreed responsibilities assignment did not follow the "Implementation Guide for the ESS (ENTSO Scheduling System) in the UCTE Processes."

Generally speaking the relevant rules are communicated to the market parties.

#### 5.3.5 P3-A1-S2 Coordination for exceptional type of contingency

The current situation within Continental Europe is that establishing and communicating formal lists of exceptional contingencies between neighbors is not a general practice.

#### 5.3.6 P3-A2-S5.2 Abroad consequences of TSOs' decisions in operational planning and in real time

Procedures to ensure the exchange of information related to changes of network configuration or major changes of the generation pattern in operational planning and real-time operation were generally implemented but were not so extended that countermeasures to prevent counter-effects in neighboring networks were firmly predetermined.

#### 5.3.7 P3-A2-S6 Data provision

Agreements between neighboring TSOs detailing the data that have to be exchanged concerning the network elements identified in the observability areas were extended within Continental Europe except in the Balkan region, where four of the local TSOs reported they had not developed such accords.

#### 5.3.8 P3-A3-S2 Overloads in N-1 situation (simulation)

In cases where no possible remedial actions were available in terms of topological modifications and generation redispatching, TSOs applied other types of remedial actions, such as voltage reduction, use of phase shifters, stopping maintenance, disconnection of tie-lines, curtailment of external schedules, countertrading or even load shedding. When the situation was very complicated with no usual solutions available, TSOs declared their system state to be at the "emergency" level and could use previously implemented emergency procedures.

Concerning the countermeasures considered available, the time lag taken into account to become effective depended on the kind of action TSOs referred to when answering the question: from a

few milliseconds (for special protection schemes, i.e. generation tripping or load redistribution/cutting in the case of outage) to minutes (for topology modification via breakers, blocking of online tap changers, transformer or PST tap position modification, capacitor or reactor switching on/off, international generation redispatching, load redistribution, MVar production modification on generation units, pump tripping/starting, etc.) or hours (for curtailment of exchange capacity, topology modification via switchers, start/stop generation unit, outage planning modification, outage restitution, etc.).

Most of the actions are related to a time delay of 15 minutes.

### 5.3.9 P3-A3-S4.1 Tie-lines operating conditions

With no exception every TSO shared values of PATL, TATL and TC for all tie-lines with adjacent TSOs and informed neighbors in the case of settings changes at the time of the change.

### 5.3.10 P3-A4-S3 Principle of “No cascading with impact outside my border”

Common detection, preparation and implementation of coordinated operational measures and remedial actions represented a widespread practice among the TSOs (six TSOs declared the SC level, the others being FC). All the TSOs but two shared data sets and additional information to prevent cascading events on the interconnection by means of calculations; all the TSOs but four defined in advance a contingency list and relative coordinated remedial actions with neighboring TSOs.

The best practice to check the effectiveness of the prepared measures consisted of regular simulation, carried out individually by each TSO during all the operational phases, of the faults in the contingency list and the related remedial actions. The best practice for security assessment on the interconnection border consisted of performing the analysis with bordering TSOs in a common framework in order to regulate the analysis performed in the planning phase (i.e. NTC evaluation, scheduled maintenance, etc.), in real-time operation (congestion management) and in post-operation.

Agreed methods of cost sharing do not yet represent a widely implemented issue, many TSOs (10 of the 29) not implementing such a practice.

### 5.3.11 P3-A4-S4.1 Regional agreement for the set of remedial actions

Advance agreement with neighbors on remedial actions and related procedures of activation in case of probable constraints impacting on the interconnection represent quite a spread of practices among the TSOs (two TSOs declared the NC level, the others being SC or FC). Only three TSOs did not have any written agreements on procedures to provide assistance to bordering TSOs taking into account cross-border remedial actions such as topological modifications, cross-border re-dispatching, NTC curtailment, etc. Six TSOs did not have written agreements with all their neighboring TSOs.

### 5.3.12 P3-B-S1.2.2 Other Reactive Power Generation/Absorption Resources

A sufficient number of other reactive power sources (i.e. generators, capacitors and reactors connected to the grid) to maintain or return the voltage to normal ranges after any contingency was available to all the TSOs (four TSOs declared the SC level, the others being FC).

Regularly checking whether a sufficient additional reserve of reactive power to recover the normal range in an N-1 situation is available was also a widespread practice, all the TSOs having reliable and effective information about the availability/restriction of reactive power reserves.

Agreed contracts with neighbors on the exchange reactive power reserve in case of necessity did not yet represent a widely implemented issue, most TSOs (19 of the 29) not having such contracts.

### 5.3.13 P3-B-S2.1.2 Coordination for voltage and reactive power management

Voltage control was coordinated between almost all the adjacent TSOs, which meant that adjacent TSOs informed each other in advance about action that would cause a significant increase or decrease in voltage at the boundary substations and the disturbances within their own control area that would cause a significant change in voltage at boundary substations and additional reactive flows on tie-lines.

Generally speaking the TSOs in Continental Europe had sufficient reactive power resources placed near to the boundaries to control the reactive power flow on tie-lines.

### 5.3.14 P3-D-S2 Transient angle stability calculation

Almost all of the TSOs declared that they had relevant dynamic models in order to carry out dynamic simulations ensuring transient angle stability in their own responsibility area.

## 6 EVALUATION OF THE TSO WORKLOAD

The self-assessment process requires a great deal of work from member TSOs and due to that reason the Compliance Monitoring Process is designed to be streamlined and the filling in of questionnaires is web-based. All the TSOs were asked to provide the amount of man-hours required to complete their self-assessment process. The work time consumed by TSOs in completing the compliance level declaration is presented in figure 7.

Unfortunately not every TSO answered the questions about workload. Those TSOs that gave an answer assessed the expenditure of time in several different manners.

The analysis shows that as a minimum one TSO on average needed only 2–3 hours to provide the answers on each policy, and as a maximum another TSO needed 120 hours to give the answers on all the standards.

One possible reason for the different time assessment may be that in a few cases only the expenditure of time on the questions of the self-assessment was taken into account and recorded, and in other cases the expenditure of time on the answers to the additional questionnaire was taken into account and the time for clarifying mismatches may also have been entered to provide a concise answer.

A second assumption is that a few TSOs attached no great importance to the declaration of the workload and then did not provide reliable data.

Due to the resulting time spread and possibly incomplete or inaccurate data an in-depth analysis of the workload is not possible.

In general it should be mentioned that the expenditure of time on the handling of those standards that need bilateral matching is highly noteworthy, especially for TSOs that have several neighbors.

In the future, clarification will be made about how the time is defined and must be measured. Additionally, the amount of requested standards and additional questions should be reviewed in order to remain within an acceptable workload for TSOs.



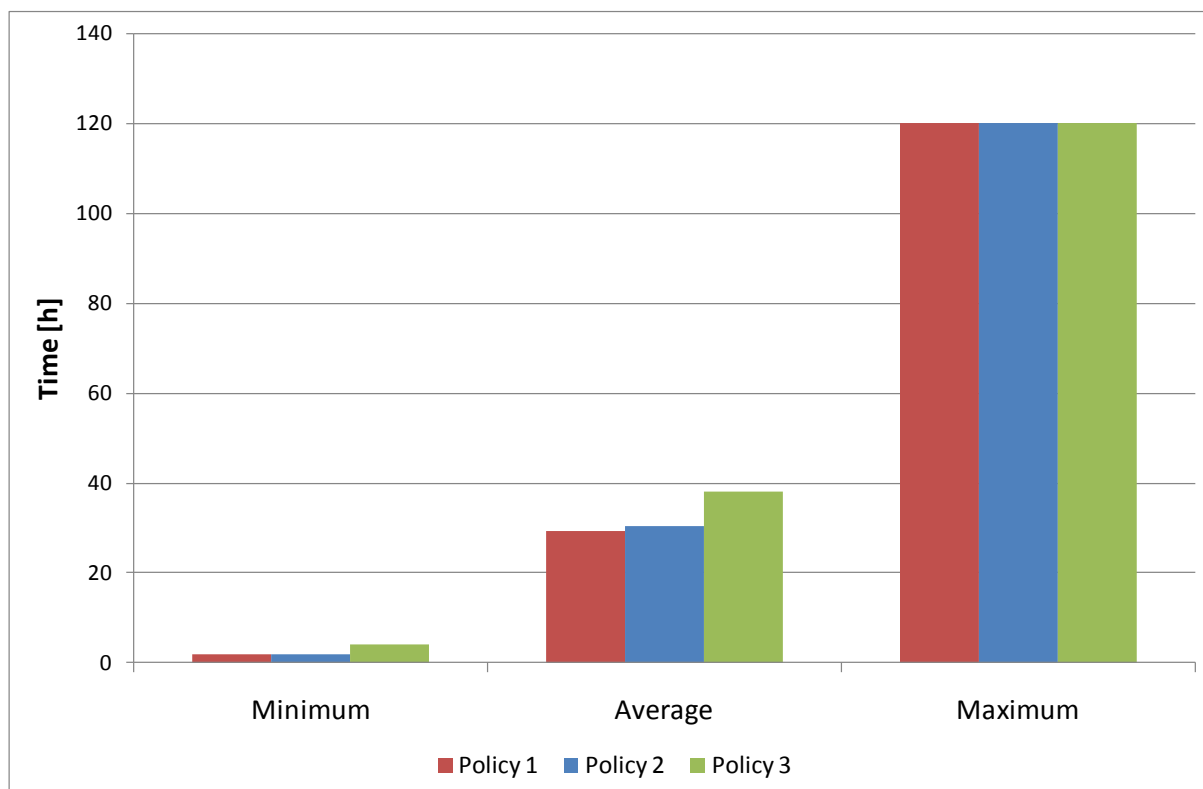


FIGURE 7. TIME CONSUMED TO COMPLETE THE SELF-ASSESSMENT QUESTIONNAIRE BY POLICIES

## 7 COMPLIANCE AUDITS 2010

### 7.1 General approach

The CME group selects six TSOs annually using two principles. TSOs that have returned improper or insufficiently completed self-questionnaires in the previous year are selected first. The remaining auditable TSOs are chosen at random to attain six audits annually. In 2010 the following TSOs were selected for Compliance Audits: CGES, ISO BiH, swissgrid, Amprion, JP EMS and HEP-OPS.

With Policy 8, Operational Training, RGCE defines a standard framework for operational training in order to provide reasonable assurance that the dispatchers have and maintain the knowledge and skills to operate the power system in a safe and reliable manner under all conditions and at all times. The common framework for the training of operating and supervisory personnel will enable the building up of operational know-how in normal and insecure system conditions.

The purpose of a Compliance Audit is to inspect the credibility of the TSOs' compliance declarations with the RGCE Operation Handbook standards. In practice an Audit Team visits the audited TSO on-site at its control room and checks hard evidence that backs up the TSO's compliance declaration. Table 4 defines the generic audit schedule that was followed in 2010's on-site audit process.

TABLE 4. GENERAL TIME SCHEDULE FOR COMPLIANCE AUDITS IN 2010

Audit questionnaire(s) sent to the TSO involved in the audit by the ENTSO-E Secretariat	<b>8 weeks prior to audit</b>
Audit questionnaire(s) returned to the ENTSO-E Secretariat by the TSO	<b>2 weeks prior to audit</b>
Initial draft of the audit report sent to the TSO with a preliminary review of its answers	<b>Before audit</b>
Audit report draft sent to the TSO review by ENTSO-E Secretariat	<b>2 weeks after audit</b>
Audit report draft returned to the ENTSO-E Secretariat by the TSO	<b>4 weeks after audit</b>
Final audit report sent to the TSO	<b>8 weeks after audit</b>

## 7.2 CGES audit

The Audit Team found that the evidence presented by CGES during the audit was adequate and that CGES was fully compliant in the case of 11 out of 14 investigated OH requirements and standards. In 3 cases CGES was sufficiently compliant.

For the standards P8-C-S2 and P8-C-S6 the Audit Team proposed to increase the compliance level declared by CGES in 2009: from sufficiently compliant to fully compliant for P8-C-S2 and from non-compliant to sufficiently compliant for P8-C-S6.

The Audit Team suggested an update to the “Manual for dispatcher training” regarding standard P8-C-S6. The Audit Team did not see the necessity of issuing an improvement plan for the other two sufficiently compliant standards, P8-A-R2 and P8-A-R3, as CGES fulfilled the requirements of the standards even without following them to the letter. The reason behind not fulfilling the previously mentioned standards was due to CGES’s lack of a Dispatcher Training System. CGES did not have any substantial advantage in having a DTS because of its small grid. The TSO will use the DTS of its neighbor during inter-TSO training in the future.

CGES accepted this view and committed itself to realizing the proposed measures.

The Audit Team recommended two further measures that were not even decisive for determining the compliance levels:

- the “Manual for dispatcher training” should have a description of training of the trainers
- use of a DTS in inter-TSO training

The three improvement plans agreed between CGES and the Audit Team were:

P8-A-R2: In the future dispatchers will use the DTS of EMS on a need basis. Since the DTS of EMS became operational in October 2010, dispatchers of CGES will have simulator training starting from the year 2011.

P8-A-R3: In the future dispatchers will use the DTS of EMS on a need basis. Since the DTS of EMS became operational in October 2010, dispatchers of CGES will have simulator training starting from the year 2011.

P8-C-S6: CGES will update the “Manual for dispatcher training program” by December 15, 2011.

## 7.3 ISO BiH audit

Considering that the audited Policy 8 Operational Training issue date was March 13, 2008 and that the last group of new employees was recruited by ISO BiH to become dispatchers in early 2009, the TSO has been able to take advantage of Policy 8 as a guide for how to

design and to perform an initial training. The ISO BiH high performances show that the policy's requisite statements are profitable for the purpose of logging and tracking such a process. In fact, this single audited Initial Training Program at ISO BiH accomplished every requisite stated in the policy for such a process.

The Audit Team's vision was that operational training at ISO BiH is good enough and in line with the spirit of Policy 8. The discussions during the audit visit showed the Audit Team members that ISO BiH does not fully comply with the spirit of requisites P8-C-S1 "Coordination of the Training" and P8-C-S6 "Training of Trainers." Nevertheless, the commitment of ISO BiH to the CE ENTSO-E decisions was definitively demonstrated by the mitigation plans launched to end this situation.

The team members were confident that ISO BiH would be able to manage successfully the declared improvement and mitigation plans on time and quality, being able to reach a full compliance level with each and every single requisite in Policy 8. However, there still remained the impression that it would be more convenient for ISO BiH to face in a complete manner the operational training process as a whole. This means establishing the concrete company policy and objectives in this matter; planning actions for the long and short term; conforming to and equipping the specific organization structure and keeping the continuous process improvement approach.

## 7.4 Swissgrid audit

The audit of swissgrid was conducted on October 13–14, 2010 at the control centre in Laufenburg. The representatives of swissgrid were well prepared for the audit and clearly demonstrated that they were familiar with the content of every single document.

During the self-assessment process in 2009 swissgrid declared full compliance with four standards, P8-A-S1, P8-A-S2, P8-B-R1 and P8-C-S1, sufficient compliance with five requirements and standards, P8-A-R1, P8-A-R2, P8-A-R3, P8-A-R4 and P8-B-S1, and non-compliance with five standards, P8-C-S2, P8-C-S3, P8-C-S4, P8-C-S5 (all covered with valid addendums) and P8-C-S6 (not covered with an addendum). The self-assessment conclusions were reasonable.

Swissgrid put a great deal of effort into fulfilling the requirements and standards from Policy 8 following the self-assessment process in 2009, and made great improvements resulting in reaching full compliance for all of the 14 investigated OH requirements and standards. For the requirements P8-A-R1, P8-A-R2, P8-A-R3, P8-A-R4 and P8-B-S1 the Audit Team proposed to increase the compliance levels declared by swissgrid in 2009 from sufficiently compliant to fully compliant; for the standards P8-C-S2, P8-C-S3, P8-C-S4, P8-C-S5 and P8-C-S6 the upgrade was from non-compliant to fully compliant.

The Audit Team recommended greater dispatcher involvement in common international training and more frequent training sessions with neighboring TSOs and this recommendation was accepted by swissgrid.

## 7.5 Amprion audit

The audit of Amprion was conducted on October 27–28, 2010 at the control center in Brauweiler. The representatives of Amprion were well prepared for the audit. Most of the relevant documents had been translated into English only for the purpose of the on-site audit and this was much appreciated. The Audit Team particularly wishes to stress the easiness and quickness of Amprion's representatives in presenting and explaining all the required evidence.

During the self-assessment process in 2009 Amprion declared full compliance with 13 standards, one sufficient compliance with the standard P8-B-S1 "Common Training" and no non-compliance with OH Policy 8.

The Audit Team found that the evidence presented by Amprion during the audit was excellent and well documented and that Amprion was fully compliant in the case of all 14 investigated OH requirements and standards. Based on the evidence shown (cross visits/workshops with APG and VKW Netz performed after the self-assessment process in 2009), the Audit Team proposed to increase the compliance level declared for the standard P8-B-S1 from sufficiently compliant to fully compliant.

The Audit Team recommended that Amprion should attach a table of revisions to all training documents, containing information on the author, the revision date and a short description of the revision. Amprion accepted this view and committed itself to realize the proposed measures.

## 7.6 EMS audit

The on-site audit was conducted on the premises of the dispatch control centre in Belgrade on November 9–10, 2010.

The attitude of the EMS representatives was careful and quite open; all the required documents had been prepared well in advance so that the audit was very effective and transparent. Since the start it was obvious that EMS had implemented and applied Policy 8 not only formally.

The Audit Team found that the evidence presented by EMS during the audit was adequate and that EMS was fully compliant in the case of all 14 investigated requirements and standards. For the standards P8-A-R2 (Initial Program) and P8-A-R3 (Continuous Program) the Audit Team proposed to increase the compliance level declared by EMS in 2009 from sufficiently compliant to fully compliant.

The Audit Team asked EMS to elaborate trainer profiles for a continuous (both periodical and additional) training program on "Instruction for dispatchers training" regarding standard P8-C-S5 (Trainers' Selection). EMS accepted this view and committed itself to realizing the request.

The Audit Team recommended that EMS should evaluate possibilities for sharing its DTS with neighboring TSOs to promote a higher level of DTS training in South-East Europe.

## 7.7 HEP-OPS audit

The audit of HEP-OPS was conducted on November 16–17, 2010 at the national control center in Zagreb.

The well prepared HEP-OPS staffs, for the audit were represented by the Director and Vice Director of the System Control Department, the Head of System Operation and Training Service, the Head of the Dispatcher Training and Licensing Department and two trainers.

During the self-assessment process in 2009 HEP-OPS declared full compliance with eight standards (P8-A-R1, P8-A-R4, P8-A-S2, P8-B-R1, P8-C-S1, P8-C-S3, P8-C-S4, P8-C-S5), sufficient compliance with three requirements (P8-A-S1, P8-B-S1, P8-C-S2) and non-compliance with three standards (P8-A-R2, P8-A-R3, P8-C-S6).

HEP put a great deal of effort into fulfilling the requirements and standards from Policy 8 following the self-assessment process in 2009. In five cases, the Audit Team proposed increasing the compliance levels declared by HEP in 2009 (from sufficiently compliant to fully compliant for the two standards P8-A-S1 and P8-B-S1 and from non-compliant to sufficiently compliant for the three standards P8-A-R2, P8-A-R3, P8-C-S6). In only one case (standard P8-C-S2) the Audit Team did not upgrade the original compliance level (SC).

The implementation of a DTS is planned by the end of 2011, thus HEP-OPS could not actually simulate dynamics with its Energy Management System and only normal steady-state analyses are performed during training programs.

Even though not decisive for determining the compliance levels, the Audit Team recommended two further measures for improvement: better organization of the documentation and more frequent training sessions with neighboring TSOs (i.e. hosting an inter-TSO dispatcher workshop).

Moreover, the HEP staff highlighted the need to promote accreditation courses for trainers at the European level to harmonize the contents and levels of training (i.e. organization of ENTSO-E master courses).

## 8 CONCLUSIONS

### 8.1 Self-assessment process

Below are the main conclusions reached by the SG CME from the 2010 self-assessment process:

#### 1. Most difficult standards to comply with

The most critical standard is P3-A2-S2, dealing with “Implementation of the Observability Area.” Indeed, six TSOs declared the NC compliance level while seven TSOs declared the SC level. In relation to this standard are P3-A1-S2 and P3-A2-S1, which deal with the contingency lists and also had non-compliances reported. These standards are all related to new methods in Policy 3 and it can be concluded that these have not been implemented everywhere successfully so far.

#### 2. TSOs with non-compliances

A number of TSOs reported only one or two non-compliances, and just the four German TSOs reported four common non-compliances. This is due to the German regulatory authority, which prescribes a pure merit order for control reserve in Germany, which is not in line with the RGCE OH standards. In Germany a discussion is ongoing to change this and to become compliant with the rules as soon as possible.

#### 3. Answer harmonization on multilateral standards (mismatches)

The self-assessment produced 411 mismatches between neighboring TSOs on standards involving multilateral borders. These mismatches did not always indicate a problem between TSOs and some standards are not even suitable for harmonization due to different best practices among the TSOs. The SG CME took a close look at every multilateral standard to decide whether harmonization was needed. It is important to keep this in mind when monitoring a multilateral standard. Due to some problems with the database there is no detailed analysis of this phenomenon in the report.

#### 4. Value of the additional questions

The additional questions provided feedback of high added value for the understanding of the synchronous zone operation and for the OH policy makers as well; the answers given by the TSOs pointed out the actual panorama of the different and the common means used within the control areas for operating the system in accordance with the OH rules. Furthermore, they gave additional information on the reasons for TSOs to declare a certain compliance level and it gave the SG CME confidence in the way the TSOs encountered the self-assessment process.

#### 5. Average workload for TSOs

During the self-assessment process the SG CME received several complaints from TSOs mentioning that the workload attached to the self-assessment of all the standards of Policies 1, 2 and 3 (more than 300) was far too high. This was not really reflected in the declarations made by the TSOs in the questionnaire on their workload. In fact, the result of this part, which was voluntary, was a little poor and not adequate for reaching conclusions. Nevertheless, the message has been received by the SG CME and in the future the workload imposed on TSOs will be taken into account even more carefully than it has been in the past.

## 6. ENTSO-E Secretariat support level

The Compliance Monitoring Program 2010 was the first one executed with the assistance (from the start until the end) of the Compliance Monitoring Advisor of the ENTSO-E Secretariat. This support proved to be very useful and it can even be stated that without the support of the secretariat it would not have been possible to carry out the work. From an IT point of view there were many problems with the database that demanded a great deal of effort both from the members of the SG CME and from the secretariat in order to check and restore the data. Due to these problems some data were lost or unreliable and could therefore not be used in the analysis.

## 8.2 Compliance Audit process

In 2010 Policy 8 Operational Training was the subject of the Compliance Audits as it was subject to the self-assessment in 2009. All the standards from Policy 8 were inspected during the visits to the TSOs.

The most important result of the Compliance Audits is that they proved to trigger the TSOs that were visited to improve their procedures and processes in order to meet the standards set in the RGCE OH. In all the cases there was an improvement monitored compared with the results sent in the year before in the self-assessment. Notwithstanding these good results some possibilities were also even identified to improve the processes and in this way gain an even better dispatcher training process.

It also turned out that not all the standards can be imposed to their full extent on every TSO. For instance, in the case of a smaller TSO with a simple grid, it would not add much if this TSO had its own dispatcher training simulator. This would add very little at a relatively high cost. In some cases more simple means might represent a decisive measure for maintaining a high level of reliable operation used and on other occasions the equipment of other (neighboring) TSOs can be used. In such cases the use DTS including wide and updated network model during frequent inter-TSO training sessions has been considered the key prerequisite for determining compliance level.

A possible area for improvement is the inter-TSO training, where TSOs train in sessions that also include the neighboring TSOs or even TSOs from the area. This could at least be carried out more frequently in some cases.



Finally it was suggested that the ENTSO-E might serve as a platform for sharing information about best practice on operational training. This could be achieved by organizing workshops in which trainers can exchange information and develop common views. One idea was to incorporate this as part of the ENTSO-E academy.

### **8.3 Recommendations for the RGCE OH**

Again, it was experienced that the standards in the RGCE OH must address only one subject and must be as specific as possible. As found in previous years, if a standard is written in a general way it leaves room for interpretation, resulting in different assessments of the standard among TSOs and as a result different answers for similar situations. The SG CME will use the compliance monitoring feedback information to improve the OH standards in order to make them more clear, understandable, and as much as possible measurable.

Another issue that became clear during the 2010 compliance monitoring was that it is not in all cases necessary for standards that are assessed with the neighboring TSOs to give the same compliance level for all the borders. There are standards that give different compliance levels on the two sides of the border in many cases. On the other hand this was not expected upfront and therefore it is recommended to the drafting teams of the RGCE OH to pay special attention to this phenomenon.

### **8.4 Recommendations for the Compliance Monitoring Program 2011**

The main finding from the CMP 2010 was that the mix of self-assessment and Compliance Audits gave good results. It gave a good overview of the status of compliance with the RGCE and it taught the TSOs how to assess their compliance level and what to do in order to improve. Therefore, the most important recommendation is to continue with this methodology in 2011. In order to improve the audit process, SG CME will develop an evidence list which the TSO must show during the audit aiming at harmonizing the approach of the audit teams, establish objective criteria for FC, SC and NC and to help the audited TSOs in their preparatory phase.

The workload must be estimated better and great care must be taken not to create too large a workload; it is better to choose quality than quantity.

In relation to the Compliance Audits it was clear that the maximum number of TSOs to visit in a year is six. This, together with the requisite that all TSOs must be visited every five years, means that there is little opportunity to visit TSOs more frequently than once every five years. It is recommended that the visits should be distributed as much as possible throughout the year instead of performing all the visits during a few months in the fall.

## TERMS, DEFINITIONS AND ABBREVIATIONS

In the following the most important terms used in this document as well as in the written and verbal communication within the scope of the Compliance Oversight Report are defined:

<b>Assessment</b>	An evaluation that allows a conclusion to be reached or a decision to be made that may or may not involve an analysis or simulation.
<b>Audit Team</b>	An investigating group set up among the SG CME members and, if necessary, other RGCE member TSOs' experts appointed with the task of conducting a <b>Compliance Audit</b> . The members of the group must be free of interest conflicts and must not belong to the investigated TSO and its neighbors. Furthermore, they must comply with the ENTSO-E confidentiality provisions.
<b>Compliance</b>	Conformity with the <b>RGCE Operation Handbook standards</b> .
<b>Compliance Audit</b>	An on-site audit performed on the premises of an RGCE member TSO to verify compliance with the RGCE Operation Handbook standards. It is conducted either as a regular process (on a five-year basis) or as an exceptional process (if deemed necessary by the RGCE Plenary).
<b>Compliance level</b>	The degree to which a RGCE member TSO complies with a specific <b>RGCE Operation Handbook standard</b> . Three levels (categories) are defined: <b>fully compliant</b> , <b>sufficiently compliant</b> and <b>non-compliant</b> .
<b>Compliance Monitoring Advisor (CMA)</b>	An employee of the ENTSO-E Secretariat whose task is to accompany the Compliance Monitoring Process from the technical and administrative point of view as well as to support the <b>SG CME</b> at its work.
<b>Compliance Monitoring Process</b>	The process of assessing whether the RGCE member TSOs are compliant with the <b>RGCE Operation Handbook standards</b> . It consists of the regular processes of <b>self-assessment</b> and <b>Compliance Audits</b> and the exceptional process of <b>Compliance Audits</b> .
<b>Compliance Monitoring Program (CMP)</b>	The document that delineates the <b>Compliance Monitoring Process</b> and points out the <b>RGCE Operation Handbook standards</b> to be checked and the TSOs to be audited during a period of one calendar year as well as describes the procedures to be followed and the demands to be responded to by each RGCE member TSO.
<b>Compliance Oversight Report (COR)</b>	The annual document in which the current compliance status of the RGCE member TSOs is presented based on <b>self-assessment</b> and <b>Compliance Audits</b> conducted by <b>Audit Teams</b> according to the annual <b>Compliance Monitoring Program</b> . For <b>non-compliant</b> TSOs it details the findings, the <b>mitigation plans</b> and <b>progress reports</b> . It may also contain proposals on how to improve the RGCE Operation Handbook and recommendations concerning the development of the <b>Compliance Monitoring Process</b> .
<b>Control Area</b>	The person who is officially responsible for the <b>Compliance Monitoring Process</b>

<b>Manager (CAM)</b>	on behalf of an RGCE member TSO – a single point of contact of the TSO with respect to the <b>Compliance Monitoring Process</b> . <b>Control Area Managers</b> are appointed in the RGCE Multilateral Agreement.
<b>Deficiency</b>	Irregularity that may occur within the scope of declarations submitted by a TSO. Its manifestations are: <ul style="list-style-type: none"> <li>• A TSO declared full or sufficient compliance with a specific OH standard, but the SG CME assessed the TSO as non-compliant.</li> <li>• A TSO declared non-compliance, but it did not submit a mitigation plan or the SG CME assessed its mitigation plan as inappropriate (e.g. from the technical point of view) or as incomplete (e.g. without a deadline).</li> <li>• A TSO declared non-compliance and submitted a correct mitigation plan, but that plan is not on schedule (i.e. the TSO has not realized the mitigation actions on time or at all).</li> </ul>
<b>Deficiency removal process</b>	A process of determining and removing <b>deficiencies</b> within the scope of the <b>Compliance Monitoring Process</b> .
<b>Fully compliant – full compliance</b>	This category applies when the RGCE member TSO fulfils an <b>RGCE Operation Handbook standard</b> in all details.
<b>Improvement plan</b>	A set of measures submitted by a “ <b>sufficiently compliant</b> ” RGCE member TSO that will lead it to full compliance with an <b>RGCE Operation Handbook standard</b> . It contains a description of actions and a deadline (schedule) for the accomplishment of these actions.
<b>Mitigation plan</b>	A list of measures submitted by an RGCE member TSO concerning a <b>non-compliance declaration</b> that will lead to compliance with an <b>RGCE Operation Handbook standard</b> . It contains a description of <b>temporary remedial measures</b> (if anything of that kind is feasible), a description of actions that will allow the removal of the <b>non-compliance</b> and a deadline (schedule) for the accomplishment of these actions.
<b>Non-compliance declaration</b>	The formal communication within the scope of the <b>self-assessment</b> of an RGCE member TSO to the <b>SG CME</b> that it is <b>non-compliant</b> with an <b>RGCE Operation Handbook standard</b> . The <b>non-compliance declaration</b> must be accompanied by a correct <b>mitigation plan</b> .
<b>Non-compliant – non-compliance</b>	This category applies when the examined <b>RGCE Operation Handbook standard</b> is not fulfilled at all or in any of its essential parts. The non-compliant RGCE member TSO must submit a <b>non-compliance declaration</b> .
<b>Progress reports on a regular basis</b>	A formal communication by a <b>non-compliant</b> RGCE member TSO concerning the implementation of the actions that will lead to the success of a <b>mitigation plan</b> and eventually to <b>compliance</b> with an <b>RGCE Operation Handbook standard</b> .
<b>Regional Group Continental</b>	Regional group of the ENTSO-E System Operation Committee, which takes care of power system operation matters in the Continental European Synchronous

<b>Europe (RGCE)</b>	System.
<b>RGCE Operation Handbook (OH) standards</b>	Conformity standards resulting from the RGCE Operation Handbook.
<b>Self-assessment</b>	The practice of a TSO to review its compliance with a chosen set of RGCE Operation Handbook standards on a regular basis and to notify the ENTSO-E <b>Compliance Monitoring Advisor</b> and the <b>SG CME</b> of its level of compliance with each Operation Handbook standard.
<b>Self-assessment questionnaire</b>	A list of questions maintained by the ENTSO-E Secretariat concerning the compliance of the RGCE member TSOs with the <b>RGCE Operation Handbook standards</b> . The self-assessment questionnaire consists of two rounds: the first round contains selected standards of the RGCE Operation Handbook and the second round contains additional questions on standards defined by the SG CME. The questions include a description of how the compliance with each <b>RGCE Operation Handbook standard</b> is to be assessed. The compliance questionnaire is a means to perform the <b>self-assessment</b> .
<b>SG Compliance Monitoring &amp; Enforcement (CME)</b>	A RGCE Working Group acting as the Compliance Monitoring Body of the RGCE. Its main task is to define and establish the processes and procedures for monitoring the <b>compliance</b> of the RGCE member TSOs with the <b>Operation Handbook standards</b> , and to propose enforcement and/or remedial measures to the RGCE Plenary, if necessary.
<b>Sufficiently compliant – sufficient compliance</b>	This category applies when all essential parts of an examined <b>RGCE Operation Handbook standard</b> are fulfilled, but the standard is not fulfilled in all details. The sufficiently compliant RGCE member TSO must submit a correct <b>improvement plan</b> . In the case of any disagreement on which parts of an Operation Handbook standard are essential, relevant RGCE subgroups will be consulted. The final decision on the matter will be taken by the RGCE Plenary.
<b>Temporary remedial measures</b>	A list of actions stated in a <b>mitigation plan</b> in order to decrease the risk during the period of <b>non-compliance</b> in which the corresponding mitigation actions will be realized. The temporary measures are not equal to the mitigation actions and do not replace them.
<b>Transmission System Operator (TSO)</b>	A member of ENTSO-E, regardless of its internal legal structure (e.g. ISO, ITO, TSO).

## **LIST OF ANNEXES**

**Annex 1. Analysis of the additional questions**

**Annex 2. Compliance Audit report: CGES**

**Annex 3. Compliance Audit report: ISO BiH**

**Annex 4. Compliance Audit report: swissgrid**

**Annex 5. Compliance Audit report: Amprion**

**Annex 6. Compliance Audit report: JP EMS**

**Annex 7. Compliance Audit report: HEP-OPS**